



American Forests and Forest Life

February 1929

The American Forestry Association

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ADEQUATE FOREST FIRE PROTECTION by federal, state, and other agencies, individually and in cooperation; the REFORESTATION OF DENUDED LANDS, chiefly valuable for timber production or the protection of stream-flow; more extensive PLANTING OF TREES by individuals, companies, municipalities, states, and the federal government; the ELIMINATION OF WASTE in the manufacture and consumption of lumber and forest products; the advancement of SOUND REMEDIAL FOREST LEGISLATION.

The ESTABLISHMENT OF NATIONAL AND STATE FORESTS where local and national interests show them to be desirable; the CONSERVATIVE MANAGEMENT OF PUBLIC AND PRIVATE FORESTS so that they may best serve the permanent needs of our citizens; the development of COMMUNITY FORESTS.

FOREST RECREATION as a growing need in the social development of the nation; the PROTECTION OF FISH AND GAME and other forms of wild life, under sound game laws; the ESTABLISHMENT OF FEDERAL AND STATE GAME PRESERVES and public shooting grounds; STATE AND NATIONAL PARKS and monuments where needed, to protect and perpetuate forest areas and objects of outstanding value; the conservation of America's WILD FLORA and FAUNA.

The EDUCATION OF THE PUBLIC, especially school children, in respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management, and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

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AMERICAN FORESTS AND FOREST LIFE

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OVID M. BUTLER, Editor

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CONTENTS

| | |
|--|-----|
| THE COVER | |
| WHERE THE PALM TREES GROW—Photograph by John Kable | |
| "FASHIONS" FOR THE NAKED SAVAGE | |
| By IGNATIUS PHAYRE..... | 67 |
| THE VISION OF LONGVIEW..... | 70 |
| INDUSTRIAL FORESTRY AT LONGVIEW | |
| By JOHN B. WOODS..... | 71 |
| LIVING LINCOLN MEMORIALS | |
| By LOUIS A. WARREN..... | 75 |
| AMERICAN ARTISTS OF THE OUTDOORS | |
| Frederick Remington | |
| By LILIAN M. CROMELIN..... | 78 |
| WHAT FORESTS MEAN TO HAWAII | |
| By OTIS W. FREEMAN..... | 80 |
| A LITTLE FRIEND OF THE TREES | |
| By ALMA CHESNUT..... | 83 |
| RED SIGNS AND WHITE SCIENCE | |
| By CLARENCE E. BOSWORTH..... | 85 |
| TREES OF THE BIBLE | |
| III. The Date Palm and the Pomegranate | |
| By ADELAIDE BORAH..... | 89 |
| WHAT IS TO BECOME OF OUR NORTHERN ELK HERD? | |
| By WILLIAM RUSH..... | 93 |
| BELOW THE SNOWLINE..... | 96 |
| TO FIREPROOF NATIONAL FORESTS..... | 98 |
| EDITORIALS..... | 99 |
| THE ABRAHAM LINCOLN NATIONAL PARK | |
| By FREDERIC M. SACKETT..... | 101 |
| SALVAGING THE CHESTNUT | |
| By FRANKLIN W. REED..... | 103 |
| DEPARTMENT OF SCIENCE EDUCATION | |
| Conducted by ELLIS C. PERSING..... | 107 |
| SAPLING SAM'S SCRAPBOOK..... | 109 |
| FORESTRY LEGISLATION NOW BEFORE CONGRESS | |
| By G. H. COLLINGWOOD..... | 110 |
| AROUND THE STATES..... | 112 |
| THE POST BAG..... | 116 |
| ASK THE FORESTER..... | 118 |
| BOOK REVIEWS..... | 122 |
| "WHO'S WHO" AMONG OUR AUTHORS..... | 128 |

AMERICAN FORESTS AND FOREST LIFE invites contributions in the form of popular articles, stories and photographs dealing with trees, forests, reforestation, lumbering, wild life, hunting and fishing, exploration or any of the many activities which forests and trees typify. Its pages are open to a free discussion of forest questions which in the judgment of the editor will be of value in promoting public knowledge of our forests and their use. Signed articles published in the magazine do not necessarily reflect the views of the Association. Manuscripts must be accompanied by return postage. Editorial and Publication Office, The Lenox Building, 1523 L Street, Washington, D. C.



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AMERICAN FORESTS

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"Fashions" for the Naked Savage

*How Clothes and Courage are Opening up the Jungled Forest
Depths of Brazil's "Green Hell"*

By IGNATIUS PHAYRE

With illustrations by the Author

SINCE Mother Eve set to work on the first short skirt, the question of clothes has loomed large in human affairs. It goes far more than skin-deep, as every woman knows. And what man is indifferent to the "well-dressed feeling?" The great composer Haydn could never write his best music until he was dressed in his very best suit, with gold rings also working in the psychological complex of well-being.

But the notion of winning vast, dim, unexplored, jungle-blanketed forests by means of clothes is new, and is the policy of General Candido da Silva Rondon, of Brazil's Federal Army. This unique little soldier, himself a pure South American Indian, is easily the dean of scientist-explorers in unknown South America—as Theodore Roosevelt testified when he begged this marvelous man to accompany him on his "River of Doubt" expedition through Amazonian wastes.

For thirty years Gen-

eral Rondon has roamed the densest of all jungles without any weapon in his hand; speaking many savage tongues, lay-

ing strategic telegraph lines, recording new discoveries in geology, natural history, geography, philology, and anthropology. Upright as a dart in body, simple of soul, courteous and kind, this fearless little soldier has served Brazil as no man has ever done since Cabral, the navigator, entered the peerless Bay of Rio four hundred years ago.

Perhaps few of us realize the vastness of the unknown regions that still remain south of the Mexican border. Colombia is only one-third explored. Huge tracts of Venezuela and Bolivia are still blanks on the best of maps. To reach Iquitos, in Peru, from the capital of that romantic land, one must even to-day circumnavigate half the continent, because 700 miles of terrible jungles intervene, with death lurking on every side from hostile savages, fevers, poisonous insects, vampires and



"They surely can't be wanting to clothe me?" This is a Medicine Man or Witch Doctor of a jungle tribe of wild folk encountered by Brazil's great Indian soldier, General Rondon

jaguars. But of all these immense states, Brazil contains the largest area of *terra incognita*. I have but to mention Amazonas, a single province of 736,000 square miles, through which the Rio-Mar (Sea-River) sweeps in awesome volume to a mouth 200 miles wide. Recently I sailed up the Amazon for a thousand miles to the rubber metropolis of Manãos, which has fallen upon evil days since the precious Heavea tree was planted in Malaya. For five days and nights the big ship slipped up this colossal waterway, whose over-all length is nearly four thousand miles. I found it walled with jungle on both sides—when one could see the sides. Silent, impenetrable, dark as night, often flooded for thousands of miles, the forest depths on either side of the Amazon were haunted with crocodiles and strange evil things, like the *piranha*, or cannibal-fish, and the electric-eel, whose shock is painful and paralyzing.

The immense mysterious states of Amazonas, Matto Grosso, and Goyaz, must alone be larger than half of Europe. Here is the so-called "Green Hell" of Brazil, so long ignored, neglected, and feared until the fascinating little soldier, Rondon, became its champion and licensed roamer, backed by the Federal and State Governments, who saw in his expeditions and novel ideas an opportunity to open up and civilize stupendous tracts of unknown territory. For all these forest-depths are peopled by aborigines of the Stone-Age; stark naked wild-folk who shoot poisoned arrows out of bows and blow-pipes, often dwelling in communistic "hall-huts," a hundred feet long and eighty feet high. In many cases a hundred tribal families live under a single towering conical roof of burity-palm thatch. Rondon will not admit that any of these savages are cannibals. Yet these man-eaters do exist on the Putumayo, where the French ex-

plorer, Robuchon, beheld dreadful orgies of drink and dance.

With wild Pará rubber valued at three dollars a pound, white men of the tropic backwoods saw fortunes at hand. Armed to the teeth these cruel ruffians fell upon the naked tribes, killing at first wholesale, then robbing them of their big smoked balls of rubber, and finally enslaving the entire community. But the record of "Red Rubber" is only too well known. Unfortunately, the fearsome memories and traditions remain; so vengeful jungle-folk are apt to slay the white man at sight as a measure of common tribal prudence.

Exploration here offers dangers and difficulties far exceeding the worst of Central Africa. The forest trees grow close together, and are woven by parasites and vines into a solid mass. Even Rondon, with all his experience and a trained staff, can often only "quarry" through a thousand yards a day. There is also peril from snakes and tigers; there are insects that bite and sting, that burrow into the flesh, that raise dangerous ulcers and maddening rashes. Worst of all are the insects of death—of yellow and black-water fevers, of malaria and a dozen other curses besides. And then comes the killing, humid heat.

"I will break in softly," General Rondon assured his Government. "But this I must do in my own way. Give me materials and a technical staff, and I'll lay your strategic telegraph lines through the heart of Matto Grosso and Amazonas." The need of these lines is plain enough when it is recalled that it

requires twenty-two days of sea and river travel to get from Rio de Janeiro on the Atlantic to the rubber-city of Manãos, on the mighty Amazon. And the President of Amazonas State told me of a local Deputy who could not take his seat in Legislature without an explorer's journey of five months from his
(Continuing on page 102)



Maj. Gen. Marianno Candido da Silva Rondon—greatest explorer of unknown South American jungles

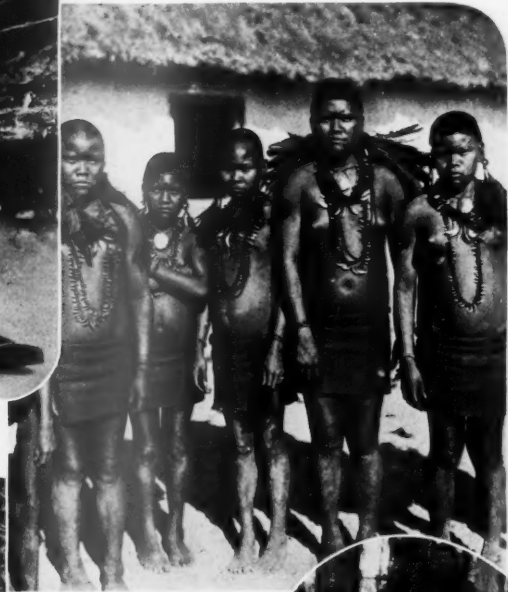


Inspecting the "lure." The wires are stretched in the jungle and then hung with clothing, ornaments and gifts, while the naked jungle-folk hidden in the tree-tops curiously watch the course of events



A savage tribal seaman of the Amazon in his prehistoric dug-out, with his two sons.

At least a beginning is being made—with "the latest short skirts"!



At the right,—the willing brother in breeches and coat and the unwilling brother who waits to see the result of this strange new magic!



A young Amazonian beauty who was one of the first converts and is now a school teacher on the Rio Madeiro



An Amazonian wizard who calls to pay his respects to the General, but prefers to cling to the "fashions" of his fathers



The keenest interest is manifested in the "demonstration" and distribution of clothing in the savage village. When one finds a bold "leader" in this "Revolution of Raiment" it's a great show!

The Vision of Longview

By the EDITOR

IN A DAY early in August, 1924, the ocean-going freighter *West Niger* cast off from her dock on the Columbia River and put to sea. She was bound for China with a cargo of Douglas fir lumber. The departure of lumber laden freighters is a common sight in the harbors of the Pacific Northwest but there was unusual interest attached to this sailing of the *West Niger*. The long dock at which she had been loaded was crowded with people watching intently the movements of the ship and waving farewells to the seamen as the great freighter moved into midstream. The departure of the *West Niger* that August day five years ago marked the first shipment of lumber from what, today, is the greatest lumber manufacturing plant in the world, and the outstanding industrial achievement in the history of American lumbering—Longview, Washington.

No one, I suppose, ever questioned that Longview, a city of over fifteen thousand population, risen from a mountain meadow in a few short years, derived its name from the man who conceived and founded it, Robert A. Long, Chairman of the Board of Directors of the Long-Bell Lumber Company, but to me it seems more likely that Mr. Long accepted the name because it expresses so exactly what the enterprise stands for—a long view into the future. No one really knows Longview until he knows Mr. Long. Upon my first visit to the city, then only three years in the building, I was so impressed with the breadth of its development, the bigness of its mills, the diversity and farsightedness of its planning, that I felt one must go to the man behind the enterprise to really see beyond the mountains which encircle the city. Mr. Long was in Kansas City and after I had stopped off and talked to him, I was at a loss to know whether personal modesty, business foresight, or love of humanity was his predominant characteristic.

"I am interested in trees," he said, "but I think I am more interested in people. I want to see them have good homes, permanent employment, and living environments that will make them happier and better citizens. Throughout the South hundreds of lumber towns have come to an end when the forests were cut, homes were broken up, and families were forced to move and seek new homes and new employment elsewhere."

"When we planned Longview we decided that this should not happen. So the first thing we did was to provide ourselves with enough timber to assure permanent lumbering operations on a large scale. Having done that, we felt safe in planning a permanent city that should have all the advantages that make for a prosperous and progressive community." Coming from Mr. Long it sounded very matter-of-fact and natural—this building of a city that should be a monument to permanent lumbering. He did not once mention the vision that had been his, doubtless for many years. "When we planned Longview," he said.



Robert A. Long

But the length and breadth of the Long vision is now plainly written. Six years have passed since Mr. Long's men, experienced in lumbering in the South, went West and staked out the site of their new city, selecting a beautiful valley at the point where the Cowlitz River enters the Columbia, halfway between Portland and the Pacific Ocean. It was a site flanked by two navigable rivers and three transcontinental railways. To the north lay the company's newly acquired holdings of timber—Douglas fir, cedar, and hemlock standing thick on mountains that slope naturally to the valley.

From that time on Longview took shape swiftly. The city was dedicated and the first building completed in July, 1922. Today its population is over fifteen thousand. There are eighty-six miles of improved streets, seventy-one miles of concrete sidewalks, twenty-six miles of street lighting and all districts of the city are served with city water, sewers, electricity, and telephone. There are three thousand permanent homes, sixty-nine modern masonry business buildings, seven hotels, three denominational churches and one community church, a hospital, a public library, four schools, including a million-dollar junior and senior high school, two theaters, a community Y. M. C. A., one hundred and sixty acres in parks, playgrounds, and lakes, a golf course and clubhouse, city tennis courts, a baseball stadium, and an airplane landing field and airport.

The city's industries include the lumber manufacturing plant of the Long-Bell Lumber Company—the largest in the world—producing one million eight hundred thousand feet of finished lumber daily; two pulp and paper plants, one of which is the largest in the Northwest; lumber plants of the Weyerhaeuser Timber Company now in the building and soon to start operations; a three hundred and seventy-five thousand bushel grain elevator, a modern cannery, and many other similar industrial developments. A six-million-dollar bridge spanning the Columbia River from Longview to Ranier, Oregon, is now under construction.

Back of Longview, its people and its prosperity, are trees—hundreds of thousands of acres of them. They are the pillars upon which the economic permanence of the great undertaking rests. The present supply of natural growth, great though it is, is not inexhaustible and the company recognizes that permanence of wood supply in the full meaning of the Long vision calls for the renewal of the forest to the end that every acre of forest land may send its flow of wood into the industries at Longview. Just as the company called in the best city planners to lay out the city, so it called in the best foresters to plan its forestry operations. John B. Woods was selected to head its forestry staff and on the opposite page he has contributed an article to AMERICAN FORESTS AND FOREST LIFE outlining the plans and activities of the company in this most interesting and outstanding enterprise in the field of modern forest endeavor.



Looking toward Longview—the town that is the actual demonstration of a vision

Industrial Forestry at Longview

By J. B. WOODS, Forester
The Long-Bell Lumber Company



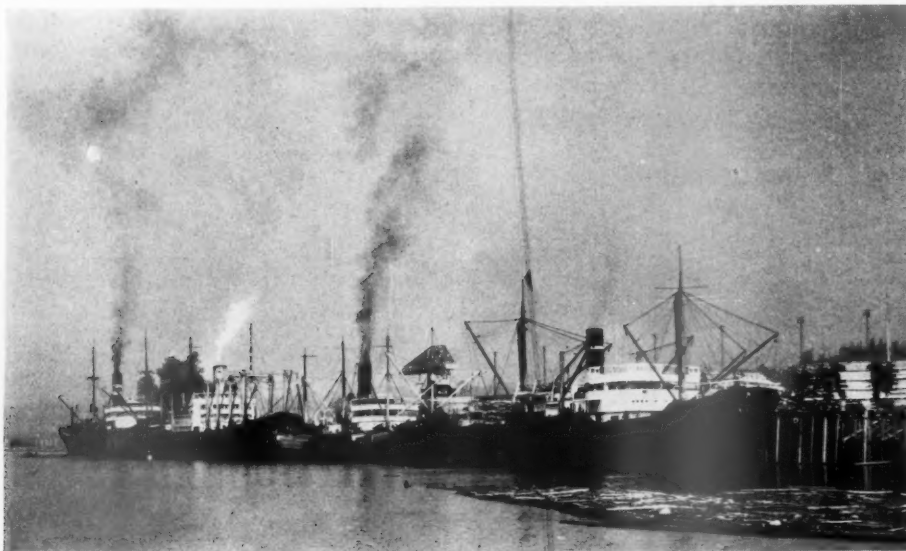
LUMBER manufacturing corporation that has been in business for half a century, and that has scores of vigorous men pushing upward in the organization, may be expected to go on performing its services far into the future. And it is reasonable to expect that the directors of such an enterprise will plan far in advance of current needs to supply raw materials for conversion. This planning involves not only acquisition of large bodies of virgin timber but also the formulation of policies and programs looking to the growing of tree crops for the future.

Such a corporation naturally has to consider the factor of cut-over lands in its scheme of things. These lands are carried on the books as assets, and good business management requires the doing of whatever may be practicable under current conditions to keep such assets productive. There are other good reasons why we practise forestry, but these two as outlined are sufficient from a business man's standpoint.

When the Long-Bell Lumber Company decided to move westward into the Douglas fir region they selected for purchase the best timber they could find, and they were guided further by their conviction that southwestern Washington promises to remain a timber producing region for all time. In arranging for the necessary manufacturing facilities they kept in mind this factor of permanency, choosing their



Looking at the timber supply of the Douglas Fir region in a broad way, the author sees production of lumber from virgin stumpage for at least a third of a century to come



At the Longview docks on the Columbia River waterfront, where ocean-going freighters load lumber for the ports of the world

city site at a strategic point on one of the world's highways, the Columbia River. It is reasonable to expect that the region tributary to this city can maintain perpetually a yearly timber production by growth of one billion board feet. And of course it also is expected that other industries and commercial activities will gravitate to this point as the great Northwest develops. But the important thing to note is that Longview is intended to be a city of permanent forest industries. This implies forestry on a large scale.

Our first step in formulating a policy of land use was to study the land and its possibilities. Then we tried to fit our particular lands into the picture of the region as



Seed beds in the Long-Bell nursery at Ryderwood, Washington, where trees are grown for reforesting the cut-over lands. The annual output is two million small trees

a whole, to determine so far as possible whether we were correct in our belief that this region is best suited to timber growing. We did not propose to fly in the face of economics either by holding agricultural lands for forestry against real settler pressure or by forcing natural forest lands under the plow by high-pressure colonization. Now we are convinced that while there are considerable areas that will be settled and farmed during the next generation, the major portion of lands in this region are capable of producing more wealth under growing timber than other crops. We do not believe that settler pressure in these rough hills will impede greatly the development of a real regional forestry enterprise.

It is evident that we are thinking of forestry for all land owners as well as for ourselves. And we have as neighbors agencies with encouraging records of forest-mindedness. The National Forests reach into our locality. The State of Washington has begun aggressive forest land protection and acquisition for future timber production. At least two of our largest industrial neighbors, The Crown-Willamette Paper Company and the Weyerhaeuser Timber Company, have advanced views too well known to require comment here. And we find that such groups of leaders as the Lower Columbia Associated Chambers of Commerce are glad to lend their influence to promote timber growing in the region as a responsibility of all land owners. Gradually we find the idea filtering out to the

small farm, that timber growing is good use of untilled areas, and that protection from fire is essential. This small farmer is important out of all proportion to his actual holdings, and we desire his help in starting and protecting a new crop of trees throughout the region.

The immediate requisite is to bring these denuded hills under new forests and to assure that this process will continue as logging proceeds. Regional forestry is our hope, and we are not greatly concerned at the moment with the question of who will cut each future forest. Natural operating zones based on topography and transportation developments will tend to govern future ownerships in the hinterland. And of course materials that can be logged to the Columbia and other floatable streams will always be available for purchase in the log market, just as today. There'll be enough timber for all if we get it started.

So much for the forestry background of Longview as a producing point. Believing that timber growing is sound

we naturally have begun to replant our own cut-over lands. And we hope that our work also will serve as an interesting and encouraging example.

It is not necessary to enter into the current discussion of whether natural reproduction will reseed all cut-over lands if only fire is kept out. Our opinion is that for our own conditions it is advisable to plant by hand from half to two-thirds of the cut-over area. Our operations are so large that each year's cut leaves a large denuded area too wide to be blanketed with seed



The company has reached the conclusion that satisfactory reproduction can best be secured if half to two-thirds of its cut-over areas are planted to forest trees. The 1928 plantings restocked 1700 acres with young trees



Natural re-seeding of Douglas Fir promises to help maintain a permanent forest crop of a billion board feet of timber a year for the region tributary to Longview



Left: The spar tree and loading boom are necessary to place the logs on the cars ready for shipment to the mills



Right: Construction scene on the railroad bridge across the Cowlitz River to connect the Weyerhaeuser Timber Company's holdings with the mills and waterfront at Longview

from adjoining stands; furthermore, we have not had a "bumper" seed year in fir since 1921. We are studying the possibilities of spot logging to foster natural reproduction; perhaps we shall adopt such a system sooner or later. We cannot justify leaving seed trees because in a stand like ours the value of the timber so left is almost equal to the cost of artificial restocking, and no guaranty of efficacy goes with the seed trees. They burn, they fall down, they may never bear enough seed to do the job well.

And one should remember that artificial replanting gives the owner absolute control over species and spacing. Cost is the greatest argument against such a method. Our policy is not fixed in this matter; we may change to some better method when that is developed to our satisfaction. But meanwhile we go on replanting such areas as are least likely to be naturally reseeded. In 1926 we started nursery opera-

tions, and during February and March of 1927 we planted 400 acres. In the winter of 1928 we planted 1700 acres, and this next season we expect to plant over 2000 acres of cut-over lands. Our aim is to maintain restocking at the same annual rate as logging denudes our lands, although necessarily about two years behind the logging.

In selecting species for artificial restocking we are guided by at least three considerations. We do not wish to put all our eggs in one basket, subject to the hazards of disease or insects, therefore we do not plant any clear stands. We are anxious to obtain early thinnings of merchantable value, therefore we are using species of known pulping value in mixture with the timber-tree species intended for saw-log yield. Exotics of special value interest us, and we are introducing redwood and Port Orford cedar on proper sites, in a modest way. It is too early as yet to report complete success



Left: A timber dock nearly a third of a mile long provides storage space for seven million board feet of lumber



Right: Longview is strategically located on one of the world's great highways—the Columbia River

with our planting programs, but we are encouraged by growth of all species used. Douglas fir, hemlock, Sitka spruce, and red cedar are used, as well as the exotics mentioned above. And of course our greatest standby is Douglas fir, for practically all sites.

In conjunction with the Washington Forest Fire Association, we patrol our cut-over and restocking areas against fire. We divide all planted areas into compartments by planting alder seedlings in double rows along strategic railway grades. We are experimenting with other broadleaf species such as willow, cottonwood, cascara, for this purpose. The alder grows rapidly and offers splendid protection against fire running over large planted areas. And we expect it to grow in value as time goes on.

Given adequate fire protection and reasonable taxation of growing forest crops, forestry becomes a practical possibility here. Timber growth in this region is amazing, and the yields can be further increased by thinnings. Beginning with nominal land values, fairly low planting costs, and compounding interest upon this investment at a long time rate of five percent; adding to that growing total the annuities for protection and management, plus taxes on cut-over lands at current rates; and we face the prospect of investing \$150 to \$175 an acre in our hand-planted stands over a period of fifty years. We expect that the value of materials here grown will be great enough fifty years hence to return this indicated investment—but increased taxes on land or growing crops would wreck this prospect entirely. We go ahead because we believe that in the near future the citizens of this state will insist upon tax legislation to permit and encourage forest growing.

State law requires the abatement of the logging debris hazard in cut-overs. At present the only practicable method of abatement is slash-burning, and of course this means destruction of considerable numbers of tolerant trees such as hemlock and cedar. The loss of these suppressed trees does not worry us greatly, but there also is loss of fir seedlings germinated after logging, which we regret. The destructive effect of such fires upon seed trees left deliberately is one of the reasons why we do not leave seed trees. Our observation leads us to believe that after heavy slash fires—and heavy burns are necessary to fulfill the intent of the law—there is no germination of seed previously deposited, so future restocking must come from standing trees or artificially. We expect restocking to come naturally from existing stands for a distance of 200 to 400 yards into the cut-overs, providing there are frequent seed crops and depending upon winds and topography, wherever such timber margins can be left undisturbed alongside for a year or more after slash-burning the adjoining cut-overs. In this the logging department can aid us by planning their changes of location and their cutting lines to give effect to silvicultural requirements, to the extent that is possible without increasing logging costs. But under the most favorable conditions half to two-thirds of the

cut-over area must be hand-planted if the land is to be returned promptly to forestry.

Near Ryderwood, logging headquarters, we maintain a forest nursery with a yearly output of two million plants. By paying attention to soil quality and by proper handling in the seed beds we find it possible to grow yearling seedlings suitable for outplanting on most sites. On the more difficult sites we use two year stock (1—1). Planting stock is in some demand in our locality by land owners interested in forestry, and this business has interesting possibilities. We have found that by laying lead wires under seed beds it is possible to greatly expedite germination of seeds by warming the soil with electric current of low voltage; an experiment of considerable value in offsetting the effects of backward spring seasons.

Because our timberlands range in elevation from 200 to 3300 feet, there are great variations in length of growing season and severity of exposure. So we have considered it advisable to obtain seeds for planting from sites similar to those where planting is to be done. A year ago we began collecting seeds from selected stands of outstanding quality and thriftiness. As our requirements are for only a few hundred pounds of all species we decided to extend this service to all foresters interested in seed selection by site. This business has developed quite remarkably, as our far flung array of forestry enterprises enables us to collect seeds in at least ten states.

We are interested enough in this work to continue it; and having three forest nurseries at widely separated points in the United States we are able to check the quality of our seeds by growing plants from them year after year. Seed collection and distribution, sale of planting stock, cooperative and independent research and experimentation, all are considered vital and logical adjuncts to our main task of reforesting the cut-over lands. Forestry is young enough and limited enough in its accomplishments to require all the practical aid that can be obtained from such work.

Looking at the timber supply of this region in a broad way and without reference to specific ownerships, we see production of lumber and other materials from virgin stumpage for at least a third of a century. Beyond that we see another fairly long period of cutting in the vast areas of second growth now well advanced. Still farther in the future we see the beginning of operations in stands that now are being planted and that will be restocked as logging proceeds. And of course we expect to witness a steady flow of publicly owned timber to supplement the private ownerships throughout this period ahead. It is our belief that given such a start, the million or more acres of natural forest land in the region will produce stumpage to maintain production permanently at not less than a billion board feet a year. All this implies aggressive forest protection and attention to orderly restocking, wherein lies our greatest present responsibility.

FLORIDA'S NEW GOVERNOR URGES CONSERVATION

Governor Doyle E. Carlton, Florida's new Chief Executive, made the following statements in his inaugural address at Tallahassee January 8: "Florida is rich in her forestry possibilities * * * at one time our lumber and naval stores produced one third of the State's income, business and payrolls * * * We must guard against exhausting this resource with no adequate effort for its replenishment * * * must give more attention to those resources which can ever reproduce, and by human supervision never become exhausted."

Living Lincoln Memorials

By LOUIS A. WARREN

A CEDAR tree planted on the Lincoln farm in Spencer County, Indiana, is said to have been the first memorial to Abraham Lincoln. The great number of tourists who visited the spot stripped it of its branches years ago, however, and it was cut down and made into souvenirs. Trees are appropriate memorials of Lincoln as the formative years of his life were spent in the woods. His companionship with the trees is attested by the fact that it was his title, "The Rail-splitter," which helped to carry him to the White House in the campaign of 1860.

Lincoln, while President, told a visitor to Washington that he could remember but two landmarks in Kentucky, the state of his birth, when he left there at seven years of age. One was an old stone house, and the other "a great tree somewhere on Nolin River." There are a few residents of that region today who remember hearing of a famous old tree on Nolin River near Buffalo, but it has been down so long its location has been forgotten. Just recently, however, some authentic information about this tree has come to light. Dennis Hanks, the boyhood associate of Lincoln, wrote to one of his relatives in Kentucky on March 25, 1866, and among his many inquiries was this one: "Is the old Lunderner poplar a-standing yet? I was born within thirty steps of that tree in the old peach orchard." This is undoubtedly the tree which Lincoln remembered and it has not been difficult to locate the place where it stood. It was near the old mill site at Buffalo, on one of the branches of Nolin



The stone marking the peaceful spot at Lincoln City, Indiana, where Nancy Hanks Lincoln, great mother of a great son, rests.

More than a hundred years ago Abraham Lincoln, then a young boy, wept as his mother, Nancy Hanks Lincoln, was buried beneath the great boughs of age-old trees on the top of a small knoll.

The little knoll has been in possession of the State of Indiana for years, and the grounds and trees surrounding the grave have been adequately cared for. Today, however, an appreciative American public is planning for the restoration and perpetuation of the entire tract of seventy acres, including the log cabin site, that once provided for the boy Lincoln and his parents. Under the auspices of the Indiana Lincoln Union plans are well under way toward the restoration of the native forest and plant life that once surrounded this historic log cabin home, and its presentation to the public as a state park.

While Indiana is going forward with its noteworthy plan, a bill has been introduced in Congress by Senator Sackett and Representative Thatcher, of Kentucky, seeking \$100,000 for improvement and preservation of the land and buildings of the Abraham Lincoln National Park, near Hodgenville, Kentucky, where the Civil War President was born.—Editor.

River. It is difficult to imagine the enormous growth which these old trees achieved. In a copy of the *Western Sun*, published at Vincennes, Indiana, on July 28, 1828, a news item described one of these monsters: "Opposite the mouth of Salt River, in Harrison County, and on the land of Mr. Brasier, stands a sycamore tree which I measured on May 28, 1828. Present at measurement were Thanslay Rucker, James S. Prather and S. E. Crutchfield, gentlemen of intelligence and citizens of Louisville. The circumference one foot above base was sixty-five feet, with a hollow eighteen feet in diameter at the base. It was fifty feet high with top blown out." This article was signed by James Pickett. At this time Abraham Lincoln was working on the Ohio River, at the mouth of Anderson Creek, down the river a few miles from the mouth of Salt River. He probably saw this immense old sycamore which rivaled the Lunderner Poplar.

The old Lincoln Oak on the Rock Spring Farm, Lincoln's birthplace in Kentucky, is the only tree now living which looked down upon the nativity of the Civil War President. It is our most treasured living memorial of him. The tree is in a perfect state of preservation and one seldom sees a finer specimen of this age. The trunk has a circumference of nearly sixteen feet at a point six feet above the ground. The branches form a perfect canopy with a spread of more than one hundred feet. With proper protection this memorial should be good for at least another century.

As early as 1805 the tree had been marked as the be-

ginning corner of the three hundred acre tract which David Vance bought from Richard Mather. This was the piece of land which came into the possession of Thomas Lincoln, father of the President, on December 12, 1808. This tree was made the beginning corner of four other farm surveys, and it bore the two initials "D. V." In 1827 the tree was set apart from its contemporaries as described in a survey of that year: "To begin at a noted white oak D. V. Vance's Corner." Although the parents of Lincoln moved away from this farm when Abraham was but two years of age, it was under the shade of this tree, close by the cabin, where Abraham spent his first play days.

When Thomas Lincoln went to Indiana for the purpose of locating a claim, he gathered a pile of brush at the foot of another oak tree there, which was to show possession. It stands today at the southwest corner of section thirty-two, in township four, and range five, marking the piece of ground occupied by the



The old Corner Oak on the Lincoln Farm in Spencer County, Indiana.

Lincolns for fourteen years. Thomas Lincoln built his cabin facing this tree and the old corner oak in Kentucky must have been brought to mind many times while looking upon this new land mark. If it were not for other trees in Spencer County more closely associated with Lincoln, this old oak would rival the corner oak in Kentucky. The beauty of the tree is much marred, however, by the undergrowth which surrounds it.

Not far from the cabin site, and much more significant than the memorial cedar, which once stood close by it, is a magnificent elm. If the trees were "God's first temples," they were also God's first school-houses. Under the shade of this old tree Lincoln could have been seen on many occasions, reading Aesop's Fables or working out a problem in arithmetic, on the smooth surface of

wood which he had prepared for the purpose. The Indiana Lincoln Union, which is sponsoring a plan to reclaim the President's Hoosier home and transform it into a state park,

consider this tree one of the most historic of the living Lincoln memorials.

Mr. Frederick Law Olmsted of Brookline, Massachusetts, has done much preliminary work in planning the recreation of the native forest and underbrush that surrounded the Indiana home of the Lincolns. The beautiful grove, which covers the hill where the President's mother is buried, is in-



Upper—A grove on the farm at Hodgenville, Kentucky, near the site of the Lincoln Cabin.

Lower—This magnificent oak, our most treasured living memorial of Lincoln, still stands on the Rock Spring Farm at Hodgenville, where he was born.



cluded in the park project. It will not be difficult to ascertain the kind of timber which flourished in Spencer County, Indiana, as early as 1816, for the report of a committee sent into the Lincoln country in Southern Indiana in 1814, states in part:

"The property is covered with heavy timber comprising oaks, beeches, ash, three kinds of nut trees three to four feet in diameter, with trunks fifty to sixty feet high—splendid material for all kinds of cabinet work—gum trees, hackberry, sycamore, persimmons, wild cherries, apples, and plums; also wild grapes of enormous diameter and height, all of which later bear fruit. There are also a large number of maple and sugar trees, from which great quantities of brown sugar can be made; sassafras trees from two to three feet in diameter and a

kind of poplar. These have a very solid wood, good for boards, while in the lowlands one finds very large cypresses good for articles made by the cooper."

When the objective of the group now sponsoring the Lincoln memorial is attained, seventy acres of land will be available for development. The tract extends from the knoll where the cabin stood near the contemplated northern boundary to the knoll near the southern boundary, which contains the remains of Nancy Hanks Lincoln, and already in possession of the state. Thomas Lincoln's



The Cedars at Jonesboro, intimately associated with Lincoln's early life.

original holdings consisted of one hundred and eighty acres. He relinquished one-half of this tract after several years possession, so that the present plans for acquiring seventy acres will give an area very much like the Lincoln farm. A beautiful memorial shrine will be erected near the burial spot of Lincoln's mother.

There is a group of old cedars in Spencer County which also should be classed as living memorials of Abraham Lincoln. They mark the site of one of the early communities which greatly influenced Lincoln. Here at Jonesboro, Abraham Lincoln not only attended school but also clerked in a store. The cedars served as a protection for the school house and are about a century and a quarter old. Here, as a small lad, Lincoln played with the other children of the community. Later on, as a six foot-four clerk, the future Civil War President weighed pork and talked politics with the customers in the store, that stood just opposite the school on the old trail leading to Boonville.



Upper—At this spot near Buffalo, Kentucky, stood the Old Lunderner Poplar, which Lincoln, as President, remembered.



Lower—One of the most beautiful of the green memorials to Lincoln is the great elm on the farm in Spencer County, Indiana, in the shade of which the boy Lincoln studied and played.

Artists of The Outdoors

Frederick Remington

By Lilian M. Cromelin

This is the second of a Series of Sketches of Some of America's Most Outstanding Artists Whose Work Expresses Their Love and Understanding of the Forest and Creatures of the Wild.



THOUGH the veil of oblivion has been drawn for nearly twenty years on the active life of Frederick Remington, his art has left the world for all time a vivid record of young America and the passing of our Western frontier. Colorful canvas and imperishable bronze hold the picturesque figures of that great pageant—the pioneer with his sturdy family, pushing ever forward in his covered wagon over valley and plain, claiming the empire of the West. Tragic encounters with the savages marked his long trek Westward and these Remington has drawn with terrifying realism. In “The Emigrants,” shown here, mounted Indians are attacking a wagon train and arrows are flying thick and fast. Though companioned by high courage, the realization of their defenseless condition is seen in the attitude of the driver of the first wagon as he attempts futilely to ward off with his ox goad the descending spear of the redskin.



The Emigrants



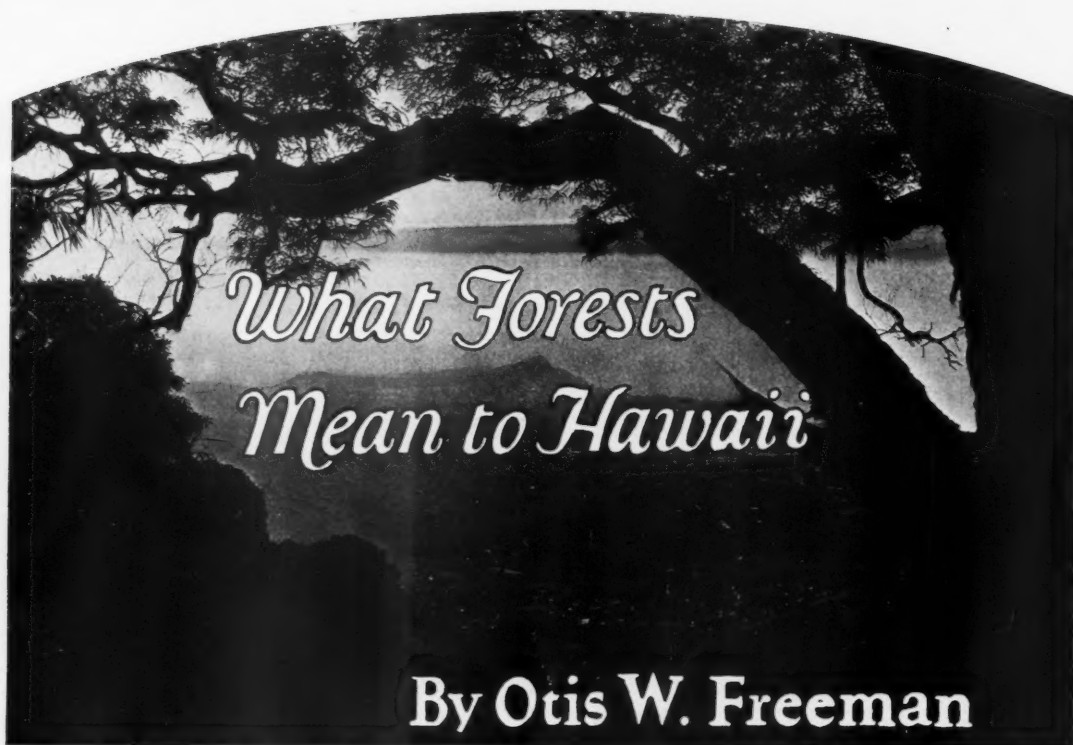
The Broncho Buster

Remington's first pictures were done in black and white. He followed these with a number done in India ink washes, these to be in turn followed by experimental work in black and white oils. Later in his career he turned to colors and his ability to catch and hold on canvas the intensely brilliant glare of the Western sun is a notable feature of his work. Among Remington's better known pictures are the "Apache Scout," the stirring "Buffalo Runners," the tragic "Water Hole," the "Sun Dance," and "The Emigrants."

From the palette Remington's love of horses turned his interest to sculpture and his now famous "Broncho Buster," executed in bronze, was chosen by the Rough Riders for presentation to their beloved "Colonel" at close of the Spanish-

American war. He received the silver medal for sculpture at the Paris Exposition in 1889 and his bronze statues and groups of Indians and cowboys are to be found today in the leading museums and galleries of the world.

The son of a newspaper man, Frederick Remington was born in Canton, New York, on October 4, 1861. The death of his father cut short his studies at the Yale School of Fine Arts and for a time he was engaged in clerical work. But when he was only nineteen years old, the lure of the West took him to Montana. Failing at ranching, Remington drifted South and eventually became scout, trapper, and cowboy, spending much time at various Army posts. All this time he was becoming impregnated with the spirit of the young West—later to breathe forth with such telling expression on canvas and in bronze. Turning his face finally eastward, after much study and many adventures, Remington was assigned by the editor of the *Century Magazine* to paint for him the picturesque Western types still remaining. And so he went back to the land of the longhorn to perfect an art essentially American.



Hawaii is rapidly becoming a popular resort land. This magnificent view is from the summit of Tantalus, up which a wonderful automobile road has been built on easy grades, and here, at an altitude of 1,600 feet, one looks down upon Honolulu, Diamond Head and Punchbowl

They Combine Beauty and High Service in this Most Distant Territory of the United States



OWELL is the importance of forestry recognized in the Hawaiian Islands, both from an industrial and recreational point of view, that nearly one-fourth of their entire area is in forest reserves. In 1927 more than 800,000 acres were under forest management, one-third of which was privately owned; the remaining two-thirds were owned by the Territory and administered by the Hawaiian Forest Service. Ultimately the area thus protected is expected to exceed 1,000,000 acres.

The Hawaiian group lies in the trade winds and the five principal islands are so mountainous that there is a great difference in the rainfall on their northeastern, or windward, slopes and the southwestern, or leeward, slopes. The windward side of a range may have a rainfall of from 100 to 400 inches a year, while the leeward side, twenty miles away, may average only from ten to twenty inches annually. Naturally this greatly affects the vegetation, and within a few miles there



The water from this waterfall on windward Oahu is taken through a tunnel three miles long and used to irrigate sugar cane on the leeward side of the mountains

is a change from dense jungle to open groves and scanty shrub. Unfortunately for the planter and farmer most of the tillable land is on the dry, leeward side of the Islands.

Ninety-eight per cent of Hawaii's exports consist of two plantation crops, pineapples and sugar. In 1927 nearly 9,000,000 cases of canned pineapple, valued at \$35,000,000, were exported. During the same year the sugar crop totaled 780,000 tons of raw sugar, valued at \$70,000,000. Sugar cane is grown on fertile soil from sea level to an elevation of 1,000 feet, providing the land is naturally well watered or can be easily irrigated. Pineapples are grown above the sugar cane, mostly from 1,000 to 2,000 feet elevation, and do not require irrigation.

Thus the need of maintaining an adequate forest cover to conserve the water resources for irrigating the sugar crop is clearly recognized, and many plantations have united with the Territory in establishing forest reserves. Without forests the heavy rainfall on the

Islands would quickly run off, leaving the streams and ditches empty, and even artesian wells would go dry or become too salty for use. So valuable is water for irrigating cane that on the Island of Oahu one plantation invested nearly \$3,000,000 to tunnel two miles to bring water from the rainy, windward side of the Koolau Range to the dry, leeward side. Another plantation pumps daily from wells enough water to supply a city of 1,000,000 people.

Originally the Hawaiian Islands appear to have been covered with forests, with the exception of the dry, leeward coasts and the cold mountain summits from 10,000 to nearly 14,000 feet elevation.

The Polynesian ancestors of the Hawaiians appear to have settled the Islands about 1,500 years ago. They introduced several varieties of bananas, the pandanus, the kukui, or candlewood tree, and probably the cocoa-

nut for food supply and other purposes, along with various vegetables as taro, yams and sweet potatoes. They introduced pigs and dogs, and both

were used for food. There were no native herbivorous mammals, and pigs were never so numerous as to injure the forests.

The Hawaiians lived mainly along the coast. Their clearings were small and were located on the valley floors where the ground could be naturally flooded for the raising of taro, and on the uplands for planting sweet potatoes and yams. Little of the areas now covered by sugar and pineapple plantations were ever cleared by the Hawaiians. Every Hawaiian family owned a strip of coast for fishing, lowland for taro, upland for yams and sweet potatoes, and mountains for bananas, kukui nut oil, various fruits, bark for cloth making, wood for various uses, and the feathers from certain forest birds esteemed for making robes for their chiefs.

After the discovery of the Islands, American and European

traders found it a convenient port of call for fresh water, pork and vegetables. When sandalwood was discovered many ships, after securing furs on the Pacific Coast, stopped in Hawaii for sandalwood and sold both products to the Chinese. So rapidly was the sandalwood exploited that by 1835 it had been nearly exterminated.

Cattle and goats were introduced on the Island soon after its discovery and thrived amazingly. They were allowed to run wild in the forests, causing much damage. The Island of Kahoolawa, once wealthy in its forests and grazing lands, has been almost completely devastated by wild goats. There are no trees, and most of the grass and herbs have been destroyed; even much of the soil has been blown away. Most of the goats have recently been killed in great drives, but it will take generations, perhaps centuries, to repair the damage they have done in one hundred

years. Forests on the islands of Hawaii, Maui, Molokai, Oahu and Kauai have also been severely damaged by overgrazing, and regions once for-



R. J. Baker

Dense jungles clothe the almost perpendicular cliffs of the coast of Northwest Kauai. In one of the almost inaccessible valleys shown in this view was laid the scene of Jack London's story, "Koolau the Leper."

ested are now waste lands. Many native trees have been injured by introduced insects and fungus diseases. Some introduced plants have also injured the forest, among which is the staghorn fern, which forms a vast mat over the

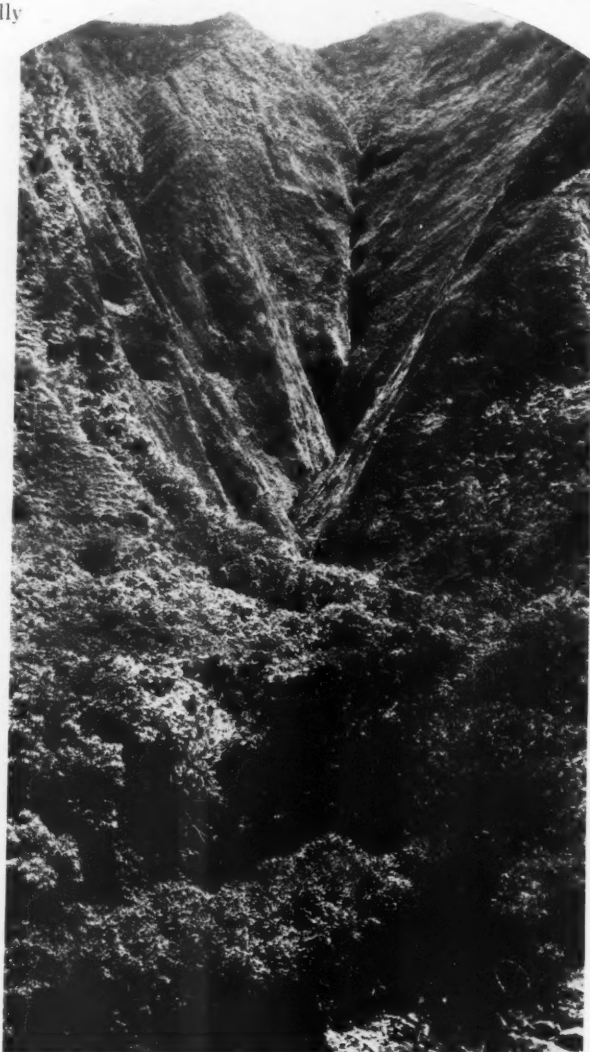
ground, prohibiting the seeds of native plants and trees from germinating. Lantana, elsewhere an ornamental shrub, is found in dense thickets in Hawaii, where the seeds were eaten and scattered by the birds. It caused much damage to the forests until a parasite was introduced that retards its growth and sometimes kills it. Cactus and guavas are not native to the Islands but after introduction spread rapidly, damaging the range and native trees. All exotic plants, however, are not harmful. A variety of mesquite, known as algaroba, was brought to Honolulu about a century ago

and has proved to be the most useful tree in Hawaii. It rapidly attains large size while growing on dry, sandy, or rocky soil. Its wood makes excellent charcoal and fuel, its blossoms are unexcelled bee pastures and its beans are nutritious to domestic animals.

Hawaii is rapidly becoming a popular resort land. The limiting factor for tourist arrivals appears to be the capacity for passengers on the steamships. Among the most pleasurable excursions possible are hiking trips through the beautiful forests.

Poor walkers can take advantage of a marvelous automobile ride up Tantalus. A wonderful road to the summit has been built on easy grades, and here at an altitude of 1,600 feet one looks directly down upon Honolulu, Diamond Head and Punchbowl. From the Kaala Range and Pearl Harbor to beyond Waikiki Beach the Island is revealed to you. The different shades of green of the tropical jungle, the red volcanic soil, the white public buildings, and the extensive sugar cane, pineapple and rice fields all combine with the blue Pacific to make a lasting and impressive picture.

Good hikers can enjoy a sixteen-mile tramp from Tantalus to Konahuanui, around the head of Manoa Valley. Special permission is required for this trip as much of the forest is part of the Honolulu Water Reserve. The trail traverses narrow ledges on the side of perpendicular cliffs to the knife edge crest



The prevention of erosion on such steep slopes as this in the Iao Valley, Maui, necessitates an adequate forest cover, and so such lands are included in the Forest Reserves, which cover one-fifth of the Hawaiian Islands. Thus the water needed for cane-field irrigation is conserved



Contrast these bare, eroded slopes on the coast of Windward Molokai with the richly clothed hills above

of the Koolau Range. Here one looks down the pali for 2,500 feet, over plantations and woodland to the Pacific on the windward side, where the mountain jungle is extraordinarily dense and where even abrupt precipices are matted with greenery. On the opposite end of the Island the forests gradually give way to brush and shrubs as the rainfall decreases.

One of the most enjoyable trips taken by the writer was to windward Molokai. This is an almost uninhabited wilderness and virtually inaccessible. The eastern half of Molokai rises abruptly from the Pacific to an altitude of over 4,000 feet, the highest point of the Island, which resembles a tipped, rectangular block. The rainfall is naturally very heavy here, and during part of the year is almost continuous. Five great valleys have been carved into the mountains by resulting streams, and so deep are their canyons that many are unscalable. Eastern Molokai is low and dry, with fertile soil. There are possibly 20,000 acres of fine sugar land here, lacking only water. To bring this needed water through ditches, tunnels and pipes to the dry plains from the valleys of the rainy windward mountains would cost more than \$4,000,000. To test the feasibility of this project recording steam gauges have been installed and once every six weeks a reading is made. In order to see this wild part of Molokai I accompanied the gauge reader on his trip in early spring.

(Continuing on page 108)



This little miracle plant will not only grow in the shade of trees, but remains green the year round and forms a beautiful carpet in bare places where grass refuses to grow. In manner of growth it practically makes a new forest floor

A Little Friend of the Trees

By ALMA CHESNUT



MY HOST was very proud of his fine old oaks, beeches, and maples.

"Were I as wealthy as Croesus," he declared enthusiastically as he showed me about the grounds, "I could not have bought them."

As a matter of fact, he did that very thing when he chose the site for his new home, but he thought otherwise. He had bought the land and the trees were thrown in as incidentals. How much they had enhanced the price of the site apparently had not occurred to him. He had the trees and he was satisfied, and upon them he was bestowing every care and attention. Just by way of insurance, he told me, he had engaged tree experts to examine them twice each year.

These beautiful old trees, however, had confronted him with one problem that for a time almost discouraged him. Grass would not grow under their heavy shade. He had labored long and hard for their continuous green turf, but

without success. Finally, he told me, when despair had almost buried hope, that he had found a miracle plant which would not only grow in the shade of trees but would remain green the year round and form a beautiful carpet for the bare spots in his otherwise pleasing grounds. A little friend, he called it.

The plant had caught my eye, and I asked him its name and where it came from.

"*Pachysandra terminalis*," he replied with a smile of superior knowledge. "Japanese spurge is its common name, and it's a little miracle plant if there ever was one."

In addition to beautifying his grounds by covering the bare spots with luxurious green foliage, my host pointed out, his miracle plant served another important purpose. It virtually constituted a new forest floor that was insect-proof, frost-proof, and sun-proof, admirably suited in every way to take the place of the undergrowth that had created a natural forest floor and enriched the ground beneath his oaks when the estate had been virgin forest.

Pachysandra, he informed me, protects and nourishes trees by reestablishing natural forest conditions. It keeps the ground shaded and cool so that the rain sinks in and is retained for future needs instead of being dried up quickly by the wind and by the surface roots of the old trees. In the autumn it catches the dried leaves as they fall and converts them into that rich mulch that is vital to the health of trees.

So interested did I become in this little friend of the trees—an immigrant from the Land of Cherry Blossoms—that, when I next had an opportunity, I consulted another friend, a landscape architect, for additional information regarding its uses. I found him almost as enthusiastic as my host had been, though his manner was professional and he spoke as one who had long been familiar with the plant we were discussing. As a ground cover, he said, *pachysandra* is being put to many valuable uses by landscape gardeners.

"Imagine," said he, "a fine new home. The owner, the architect, and the builder have combined their skill and experience in planning it for convenience and beauty, and a landscape architect has planned the grounds, laying out the walks and drives, arranging clumps of shrubs and garden beds, in most artistic fashion.

"Between the house, let us say, and the drive, he has planted tall pyramidal arborvitaes, and, in front of these, he is going to plant feathery retinosporas, choosing plants lower in height. Japanese yews are to taper the planting down to the walk, allowing space for Pfitzer's junipers to spread out and finish the slope. Perhaps he will add a few plants of *azalea hinodegiri* to lend a touch of color in the springtime.

"Sounds effective, doesn't it? Well, it is an effective planting. But the job after it is finished will not look quite right, because the bare soil will show beneath the evergreens and either it is going to dry out and bake, or weeds are going to take root and make the bed look slovenly. Something has to be planted to cover the naked-looking ground and *pachysandra* is the plant.

"It is green all the year round. It requires as little care as the evergreens themselves, and it will grow under the massed trees as well as under the azaleas. The height of the plant

is uniform and it spreads itself but it does not crowd out other plants. In fact you can plant spring flowering bulbs in with it, and after they have bloomed the *pachysandra* helps cover up their dying foliage."

Still other uses were specified—on steep banks, for instance, where grass is likely to be washed out by rains and where it would be difficult, in any case, to use a lawn mower. The miracle plant when given a start there soon has the situation well in hand, spreading its rich verdure down the slope, needing no care and holding the bank in place.

In planting decorative borders of ericaceous plants, such as rhododendrons, kalmias, azaleas, and mountain laurel, *pachysandra* is especially effective. All of these are woodland

plants, and like the oaks and beeches grow best when woodland conditions are maintained for them. They like a cool, shaded soil that will hold every drop of the spring rain that is needed for their blooms, and every autumn leaf that falls to enrich the mold.

These blooming woodland evergreens are shallow-rooting plants, but the roots of the *pachysandra* go even less deep so that they may occupy the same space without interfering with each

other. Even in foliage they harmonize, for the leaves of the miracle plant are tinted the rich, deep green of the mountain laurel.

One more question occurred to me.

"Would it take a lot of plants to fill in the space under a grove of oaks or evergreens?" I ventured. "I imagine that it would be quite an expensive proposition to buy enough for such a purpose as that."

"Well," my friend replied slowly, "the cost is not so great considering the value of the plant and its permanence. It is being raised quite extensively in this country by specialists who know how to propagate it, and when it is bought in quantity, the price is really moderate.

"We call *pachysandra terminalis* the Good Samaritan of the garden, because there is none that serves better and it serves by helping others. There are thousands of gardens in America that would be improved by planting it in places where grass and other ground covers will not grow."



Pachysandra has been used to beautify with its evergreen garment this shady corner of the garden where dense foliage prevails

Red Signs and White Science

How the Florida Seminoles Read the Signs of Nature and Escaped the Recent Tropical Hurricane

By CLARENCE E. BOSWORTH

FOUR weeks before the hurricane struck Palm Beach and the east coast of Florida last September, the Seminole Indians of the Okeechobee Band prophesied

the disaster. They vividly described the velocity of the coming wind, specified the depth of water which would sweep the Everglades, and warned of general destruction and appalling loss of life.

No quibbling marked their predictions. The blossoming of the saw grass first attracted their attention. This blooming was out of season, and untimely blooming of this Everglades grass has been for centuries a signal to the Seminoles to stop, look, and listen.

They sensed a certain tenseness in the stillness which hung over the 'Glades; the smaller birds stopped singing and chirped nervously, and their flights were short and furtive—their general drift was northward and westward. The great buzzards, too, were apprehensive and seemed to group themselves as though in consultation. Instead of taking their usual great, gliding flights, they went aloft and nervously beat the air—their drift was northward and westward. The alligators barked with unusual frequency and exposed themselves recklessly, moving in great num-

Among the first to enter the Everglades on rescue work following the tropical storm that swept Florida last September, Mr. Bosworth's observations are of unusual interest, for not only did he weather this storm and the hurricane of 1926, but survived the destructive Tokyo typhoon in 1917 and came out of the wreckage of the Formosa typhoon the following year. As a writer, traveler, and historian he is intimately acquainted with many races and people, and has devoted the past three years to recording the history of the Florida Seminoles—Editor.

bers toward deeper waters. The water snakes moved with them. Meadow rats and rabbits began a trek along the roads and trails, northward and westward, squeaking and grunting irritably, making little effort to hide their movement. Crickets signaled a warning to those who would listen. This was enough. The Seminoles had read the signs.

To those who, in the light of science, regard the reading of "signs" as a form of superstition or unwarranted credulity,

the accuracy of these Indian forecasts must have been surprising at least, and somewhat challenging of explanation. The Seminoles did not undertake a miles-per-hour prediction of the wind because that is a white man's classification. They did, however, graphically describe its velocity, and the wind was as terrific as they said it would be. Not until the storm was actually in progress did the white man with his science know about it, and then ships in the storm zone wirelessly the news. This was a week before it struck the Florida coast. Almost hourly, the weather men radioed ships for additional information, and from these reports they computed the speed, intensity, and general direction of the storm. Eventually falling barometers in Porto Rico and along the Florida east coast signalled the storm's arrival. White science was twenty-four days be-



The Seminoles sensed nature's danger signals and prophesied disaster when the saw grass in the Everglades bloomed out of season and the alligators, exposing themselves recklessly, barked with unusual frequency and moved in great numbers toward deeper and safer waters

hind red signs. Four weeks before the storm the Indians told of a seven-foot wall of water that would sweep over the 'Glades. When it came, it was six feet high and tore through the dyke of Lake Okeechobee. An error of a single foot in such an estimation most certainly does not discredit the ability of the Seminoles to read "signs." The general destruction which they predicted was sufficient to devastate a part of Palm Beach and Palm Beach County to the extent of nearly \$150,000,000. The recovery of more than three thousand bodies of storm victims was horrible proof that the loss of life was appalling.

Having read the "signs," the Seminoles prepared a brief migration into the land of their brothers, the Tallahasseees, far to the north and west of their own threatened territory. Before leaving they urged their white friends to follow them to safety. But white men no longer believe in "signs." They listened with supercilious amusement to the earnest pleadings of the Indians and, with deprecating gestures, told the Seminoles to be on their way. The Seminoles went; the white men stayed. Insofar as is known, not a single Seminole was lost in the storm.

Chagrined, undoubtedly at their own inability to forecast the intensity of the approaching storm and seeking to find some solace, the white men are seeking now to disprove the accuracy of the Seminole forecast of the storm by seizing upon the official statement from the Red Cross headquarters at West Palm Beach that on the third day following the storm, a Seminole arrived at headquarters seeking aid for his people. I saw this Indian and he did not appear as bedraggled as some of the rest of us. From his appearance one would say that he had been more regularly fed in the days immediately preceding his appearance at headquarters than most of us who were engaged in rescue work. Certain it is that none of us who made the first trips into the 'Glades saw any Seminoles.

If the white people who have seized upon this Indian's appearance at headquarters were more intimately acquainted with the Seminoles, they would find less comfort in his request for aid. The Seminoles are not naturally greedy or grafting, but contact with white men has given them new ideas of conduct. From us they have adopted the idea that if something usable may be had for the asking, it does no harm to ask.

A day or two after the Miami storm in 1926, word reached the Seminoles that prodigious quantities of food, clothes, and other desirable supplies were being given away in the city. Chief Tony Tommy marshaled his band into town after admonishing his people to look as pitifully needy

as possible, but when they arrived, he saw what a mess the white man was in, so they wandered back into the 'Glades as silently as they came. Some days later, a rescue detail was sent to them but the rescuers found that, except for a rather discomfiting wetting, the Indians had suffered no ill effects from the storm. The Indians also predicted this storm, but seem to have attached little importance to its coming because they stayed in the 'Glades to weather it.

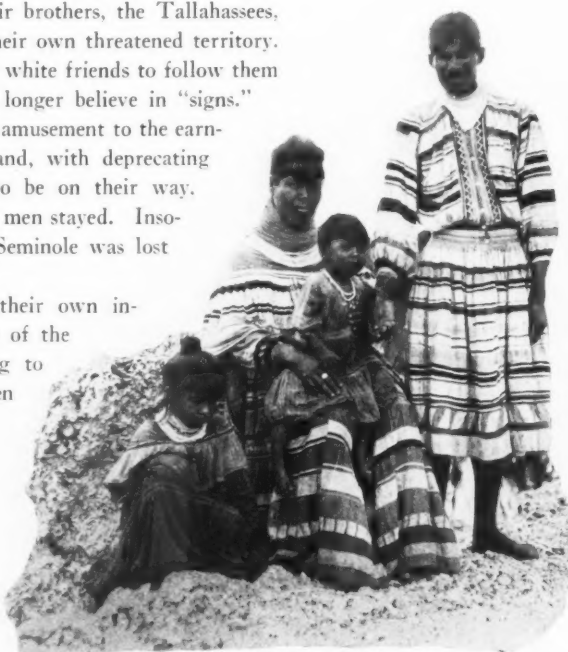
And what of the white man with his radios, barometers, and whatnots of science to foretell storms? He was only twenty-four days behind the Indians with their saw-grass blossoms, crickets, and buzzards. And he was doubtful as to the certainty of its coming. For six days he charted its progress along a course as true as any crow ever flew—direct for Palm Beach. Unlike the Seminole, he fed himself on false hopes. Saturday, he allowed that the storm might strike Palm Beach; Sunday morning he said that it probably would. Sunday afternoon it did. Sunday evening three thousand lives had been snuffed out and \$150,000,000 worth of property and improvements awaited replacement.

If the white man had sensed the same certainty in his science that the Seminole sensed in his "signs," the loss of life might have been negligible. There was ample time for the removal of everybody from the threatened area.

The Seminoles proved that. And who are these Seminoles?

Today, they seem to be chiefly important as items of interest to those who visit Florida in winter. They are more significant than that, however, even though they may be no more important economically and socially. Until 1750, the Seminoles were a part of the Creek Confederacy and lived in Georgia. The name properly is Simanoli, and means renegade or runaway. Statements as to why the Seminoles withdrew from the Creek Confederacy differ. They were Muskogean, and the Muskogean were the chief tribe of North American Indians of the Creek Confederacy which included Creeks, Choctaws, Chickasaws, Seminoles, and others. It does not appear that economic discontent could have caused their withdrawal.

The Seminoles claim that their forefathers under their first independent chief, Seacoffee, were opposed to the warlike living of the Creeks, and having learned of the land to the south which offered them peace, plenty, and the oppor-



Everglade Seminoles—These Indians are the only independent people in our country. They have never recognized our authority and technically are still at war with us. Their garb is individual and highly distinctive

tunity to live as they chose, they migrated to Florida which was then Spanish territory. It is entirely possible that the Seminoles sensed the portent in the aggression of the Colonists and realized the futility of resistance. If this is true, it is equally possible that they were shrewd enough to see that Spain was not working very hard either at

the colonization of Florida or the government of the promising peninsula, and it may have seemed to them that freedom in Florida would be nearly, if not quite, absolute.

The Creeks and white critics say that they migrated because they were too lazy to fight, too shiftless to keep pace with the Creeks, and too indolent to hunt under comparatively difficult conditions. Not much is found to substantiate this theory, however.

If the Seminoles fled into Florida to escape warfare, they



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Four weeks before the terrific hurricane struck and devastated Palm Beach last September, the Seminoles of the Okeechobee Band prophesied the disaster, pointing to natural signs and warning their white brethren of coming destruction and loss of life

certainly went in the wrong direction because they ran bang into it. History, written according to the white man's formula, says that the Seminoles raided Georgian and Alabamian settlements and carried off slaves. But it is more in accordance with probabilities that escaping slaves fled into Florida to join the Seminoles who gave them more freedom and less work.

This acquisition or reception of slaves was nothing new in 1817 and 1818 when their "raids" were most talked about,

for one of the first messages that Congress ever received was from the Georgians who asked that a large number of Colonial troops be placed along the southern border of the state to keep slaves from deserting their masters. It is hardly possible that the Seminoles, after twenty years of acquiring these negro recruits without effort, would have felt



In the last American jungle, this tribe of Seminole Indians make their home. This intimate glimpse of the family life of a unique people was secured in the heart of the almost impenetrable Florida Everglades, more than sixty-five miles from the nearest white settlement

any need for aggressive effort to acquire more. And there is no evidence that they ever wanted them, anyway.

They did, however, appreciate loyalty and when the Georgians demanded that the Seminoles return their slaves, the Seminoles stoutly refused. This led to one of the most humorous incidents in the military history of the United States, and it gave Georgia the distinction of being the only state in the Union that ever carried on an independent foreign war. This war was unique. There was no fighting. The Georgians couldn't find the Seminoles.

They found plenty of trails but no Indians. The Seminoles had a cute trick of tramping a perfectly evident trail, broad and inviting. Then, individually, or in small groups, they jumped the border of the trail, climbed up into the trees, draped themselves with Spanish moss, and kept very quiet while the Georgian marched bravely on. Georgia's private war fizzled out in 1810.

Then came Andrew Jackson and the Seminoles found themselves with a real war on their hands. So did the country. The United States, using seven successive generals, and spending \$17,000,000, fought the Seminoles for seven years. The army finally succeeded in rounding up fifty braves and twenty canoes near what we now know as Fort Lauderdale. The captives, however, were immediately released, and the Seminoles recognized as one of the "Five Civilized Tribes." More than that, the Government recognized the Seminoles as a Nation and granted them autonomy.

Op-peel-it ojus! That is, it is to laugh heaps. No Seminole ever surrendered; his losses were practically negligible. It was not within the power of the government to give the Seminole something that he had always had; so being recognized as a civilized tribe and as a nation did not flatter the Seminoles a bit because they never recognized the white man's capacity to flatter them. Even the four hundred Seminoles still left in Florida today secretly regard us as a people who lie, cheat, and steal, and, consequently, are entirely unworthy as a people for them to associate with. Despite the fact that in 1916 all Indians were given full citizenship by Congress, the Seminoles refused to accept it.

The Seminole wars seem to have been wantonly precipitated, and appear to have been forced by that spectacular soldier, Andrew Jackson, who, after his great defense of New Orleans, became a national hero. He was of the South and when the planters appealed to him personally for a solution of their troubles over escaping slaves, their appeals concerned something that he well understood. When he told the nation that the Seminoles must be driven out of Florida, that settled the matter. Yet, after the war had been in progress several years, bewildered General Jessup wrote to the President, "We are attempting to remove the Indians when they are not in the way of the white settlers, and when the greater portion of the country is unexplored wilderness of the interior of which we are ignorant."

Then Florida, in 1819, became the property of the United States and all America felt that it now had a free hand to deal with the savages as each and everyone saw fit. The slave-holders along the northern border felt free to organize

independent excursions to recover their slaves. This led to excesses and the government found that the raiding planters were almost as much of a problem as the Seminoles.

Then, somebody conceived the idea of deporting the Seminoles to an isolated spot in the West and a great pow-wow was held. Arkansas was chosen as the objective but the Indians stipulated that a delegation should be permitted to visit the "far country" to see how they liked it. This request was granted and the government allowed the Indians to migrate to the land of the Pawnees as best they could. But they were violently received. The Pawnees stole their ponies, blankets, and all other possessions and beat them out of the country. Glad to escape with their lives the Seminoles, weary and worn, returned to Florida and declared most emphatically that they didn't like the "far country." Before much more could be done about it, they had melted away into the Everglades and the Army was again confronted with the task of rounding them up.

These Florida Seminoles are today the only independent people living within the confines of these United States. Technically, they are still at war with us, if we are not with them. They seek no favors and accept none. During President Cleveland's administration when the government tried to give the Seminoles plows, wagons, hoes, and the like, Chief Tiger Tail pointed scornfully toward a settlement of shiftless whites and said, "Indian no want. Give 'em him."

The government has tried to educate the Seminoles and to make them feel that they would have a greater part in the plan, invited them to help build the schoolhouse under the supervision of the man who was to be their teacher. They worked faithfully, and the night before school was to open, teacher and intended pupils lay down in their blankets to sleep together. In the morning, the teacher awoke to find himself alone. The Indians would have none of it.

One way and another, the Seminoles have always maintained comparative freedom of action and thought, and they still maintain it even when it comes to hurricanes. And from their last demonstration, it appears that they still retain the ability to out-guess the white man.

The young bucks have departed largely from the wearing of the tunic, bright sash, and close-fitting, deerskin leggings, but they still wear many shirts and as many loosely tied, bright colored handkerchiefs around their necks as they possess. But the dress of the women has not changed. They still wear no headdress at all. They wear a straight, full skirt, long enough to hide their bare feet, and the long sleeved, full fitting waist which fails to meet the skirt band by about two inches. They satisfy their longing for adornment with metal breast-plates, bracelets, and strings of bright beads.

Their houses are still largely of palmetto leaves and skins of wild animals with a floor of split logs raised about two feet above the ground. Some of the more progressive and less stubborn have recently built board houses.

They have never felt any great economic pressure but they have found tourists a source of easy wealth, and this has enabled them to turn the white man's motor car into the Indians' delight, and with it they ramble over Florida at will,

Trees of the Bible



Photograph by James Ricalton

The solemn date palms of the Holy Land, the "goodly" trees growing patiently through hundreds of years

III. The Date Palm and the Pomegranate

By ADELAIDE BORAH

THE land that achieved the fir tree and the cedar tree, the oak tree and the tamarisk, gave us alike the tall and solemn date palm, *tamar*, an "up-right" tree (*Jeremiah 10:5*), a "goodly" tree (*Leviticus 23:40*), growing patiently through hundreds of years, and bringing forth its golden fruit in due season even "in old age" (*Psalms 92:12-14*). "The righteous shall flourish like the palm tree," said the Psalmist in a moment of exaltation. Yet upon another and less exalted occasion he tells us that the "green bay tree" was doing equally well.

The absence of the date palm tree from the Jordan River Valley is one mark of the complete desolation, if not desecration, of the Holy Land. Scattered along the shores of the Dead Sea are great trunks of this mighty tree which had poured into the Sea from the river. Here where they once grew in thick forests, drifting sand has covered every trace,

although reclamation to a shadowy semblance of the old luxurious productivity is being carried on at present. Indeed, so deep is the sand in these places that the old site of the storied and much sung Jerico can scarcely be located. Jerico, the city of the moon; Jerico, the city of palm trees, on the broad plain of Jerico, having the same longitude as Jerusalem, yet so far below the level of the ocean and hemmed in by green covered mountains; so warmed by fair soft breezes blowing from over the Dead Sea and fed by hot springs of fresh water, that this region has still today climate and soil eminently suited to the growth of the date palm (*Deuteronomy 34:3*).

When Abraham came trudging into Canaan, the mighty sons of Anak, those Amorites with the height of cedars and the strength of oaks, dwelt at Hazazon-Tamar, "pruning of a palm." Hazazon-Tamar was also the name of the fountain, a hot spring with a drop of from 300 to 400 feet out

of the side of the mountain, watering a narrow strip of land and creating an oasis just south of the Jordan River between the Dead Sea and the foot of the range. This name was later changed to En-gedi, "fountain of a kid" or 'Ain Jidy, when that portion of the country became known as the land of Jehosaphat, king of the tribe of Judah; and a famous caravan route wound by it. Here grew the date palm and the vine, the acacia and the balsam, and rich soft grass like pile velvet (*Joshua 15:62; Ezekial 47:10*), a boon to weary travelers.

Wherever was a sheltered place, in the courts of palaces and in well-watered spots, there would be found a date palm. One writer believed them not only the most beautiful of trees, but also the most varied in usefulness. He says, "It's fruit hanging in clusters of amber or gold is at once pleasant to the eye, delicious and nourishing—the food of the poor and the luxury of the rich. The very kernels when broken up feed the goats. An incision in the stem yields a drink which takes the place of wine. The crown which grows from the top and the inner fibers and pith are boiled for food. Mats and baskets are made from the leaves while the stem furnishes pillars, roofing, and furniture." "The crown which grows from the top" is a delicacy which we ourselves may enjoy, served as a salad. It has an evanescent, not unpleasant flavor and may be had from any one of the importing houses which handle such commodities, the supply coming to the eastern United States, probably from Porto Rico, Cuba, or Florida.

Deborah sat in her seat of judgment under a palm tree (*Judges 4:5*). Not that Deborah who was nurse to Rebecca and was buried under a prickly oak; but Deborah the prophetess, a judge in Israel when it was ruled, not by kings but by judges. And she lived alone with her children under her own roof-tree between Ramah and Bethel in Mount Ephraim in the meadow of Gibeah, and had her seat of judgment under a nearby palm tree—an inspiring background for any prophet and judge, for, undoubtedly, it was of the species which was to be found at that place at the time, *Phoenix dactylifera*. This species rises stark and unbranched 100 feet or more to its crown, relenting graciously under the crown

into long green plumes at once dignified and light, swaying in the passing breeze and adding a *benedicite* to judgment and to prophecy. This particular tree later became *Baal Tamar*, "Baal of the palm tree" (*Jeremiah 20:33*), after the "strange" god. Carvings of the design of the date palm appeared on all the walls of the Holy of Holies of the Temple (*1 Kings 6:29*).

Branches cut from the wild palm and strewn along the way of conqueror or hero, garments spread before him to walk upon, and the shouting and singing of his name in paeans of praise (*Matthew 21:8*) were followed, in one instance, by a nailing of The Man upon a Tree, a crown of thorns being added in good measure from the *jujube* or lotus tree.

A league of canvas splashed over with vivid greens and orange reds shouting the Hallelujah Chorus is a pomegranate orchard in blossom, and the air ambrosial—with the true perfume of Arabia, coming, as is believed, originally from Persia, Afghanistan, and the Caucasus. The name itself, *rimmon*, is identical in both the Hebrew and the Arabic. The glossy leaves of the pomegranate tree, or bush as it is but fifteen



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The traditional Garden of Eden as it appears today, flowered by the exalted date palm, the "upright" and "goodly" tree of the Biblical narrative

feet high, prove a perfect background for the flowers which emerge at the ends of the new branches in bell or tulip shape of orange red color deepening into crimson on some.

It is as easy to become enthusiastic about the fruit. An apple in shape, and wearing a hard brown calyx like a crown, it glows between the fresh colored leaves, brown gold suffused with red like good blood coursing beneath an amber skin. Broken, there disclosed are tiny compartments symmetrically arranged in longitudinal form, each plumped with pink nectar and each holding a red seed, sealed, signed, and delivered for specific delectation. The pulp of these seeds, with water and sugar added, yields a cooling drink called granadine, a sort of spiced wine. "I would cause thee to drink of spiced wine of the juice of my pomegranate" (*Song 8:2; 4:3; 6:7*).

The bark of the root of the pomegranate tree has high medicinal properties, which are well known. Even the skin of the fruit when boiled furnishes a remedy for an ailment

called *tenia*. A smooth black writing fluid is also made from it. Theophrastes described this tree 300 years before Christ and Pliny valued it above all other fruits for its beauty and its uses for medicine.

The spies brought pomegranates from Eshcol to Moses and the Children of Israel waiting in the Wilderness of Paran, and we may well believe they equalled the single cluster of grapes which it is recorded required two men to bear between them on a staff (*Numbers 13:23*). So far beyond our visual reach are such proportions that they carry the suggestion of winners at a tribal exhibition of fruitstuffs.

A pomegranate tree sheltered Saul at one time, for we find him tarrying under one "in the uttermost part of Gibeah . . . which is in Migron, and the people that were with him were about six hundred men" (*1 Samuel 14:2*); the six hundred, I take it, were tarried under the sun.

The Egyptians used the pomegranate in their sculpture, but mainly it showed the lotus bud. The Israelites, on the other hand, were lavish in its use in wood and brass in the decorations of the Temple, and it was embroidered in bright colors—blue, purple, and scarlet—

on the robes of Aaron the minister, "a golden bell and a pomegranate, a golden bell and a pomegranate, round about the hem of the robe to minister in" (*Exodus 39:26, etc.*).

When the Prodigal Son "would fain have filled his belly with the husks the swine did eat," he was gazing upon a familiar scene in Palestine: an orchard of kharub, or carob trees, and, beneath them, running loose, the swine and other livestock fattening upon the succulent fruit which ripened and dropped to the ground. We know this fruit as our old

friend, the Johannes Bread tree, or St. John's Bread.

Memory here picks up the thread and follows through the years, halting with you at the Italian fruit stand just outside the school-house yard. You have stopped to buy a molasses scotch cake, perhaps, or a pretzel of the big, satisfying kind; but today your eye is caught by the dark brown bean pods Tony is arranging, and you ask him what they are. He replies, "Ah, San Jan Bread, San Jan da Bap—, he et dam." So, being willing to establish a kinship with "da Bap who et dam," you bought two for a penny—two, long thick, dried pods about an inch and a half in width and ten to fourteen inches long, that tasted like nothing at all, the pulp sweetish, insipid, the



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Date palms once grew in great forests in both the Jordan Valley and the Wilderness of Jerico, but drifting sand has covered every trace. Above—the barren Jordan Valley as it appears today. Below—in the Wilderness near Jerico, the traditional city of palm trees, the original site of which is now buried deep in the drifting sands

flesh hard and leathery, with several flat slippery beans inside which you did not attempt. The common Semitic name, *xarubu*, for this tree, is the same in Assyrian. It is very similar to our own apple tree, with heavier, longer, dark evergreen leaves which give it the appearance of an evergreen bush.

Notwithstanding that John the Baptist is reputed to have eaten of the kharub tree fruit, I am reluctant to admit that the records show him as subsisting upon locusts and wild honey, and here again is a split. The locust was thought to have been the locust tree, the pods of the Johannes Bread tree being very like those of the honey locust, thick and dark green and from six to ten inches long. But a common article of food among poorer classes then, as now among some wild Bedawin tribes in Palestine, was the insect, the edible locust. Doubtless thinking such a thing incredible, or to save the crier in the wilderness from the opprobrium attaching to those who ate such lowly food, monks during the Mediaeval period planted honey locusts near John's Grotto in the desert. The kharub tree is to be found there as well, which fact may have given rise to the name, St. John's Bread. The *Book of Enoch* compared the Johannes Bread tree centuries before this, however, with the Tree of the Knowledge of Good and Evil, which gives a little to both sides.

A little girl in North Carolina thought the crepe myrtle bush growing in her grandmother's dooryard named for her; but even Queen Esther could not claim such a distinction, although the Hebraic form, *Hadassah*, for the name Esther, is from the Hebrew *hadhas*, or, myrtle (*Esther* 2:7).

The myrtle tree, of a hard, unusual quality and grain, is native to Palestine where it may yet be seen, as often a low bush as a tree, depending upon the conditions of climate in which it finds itself (*Isaiah* 4:19; 55:13; *Zechariah*

1:8, 10, 11). There are myrtle bushes on the Mount of Olives today. The phrase, "branches of thick trees," is interpreted as meaning these, their perfumed leaves of beautiful dark green and their exquisite flowers, like white stars, make them equal with the palm and the willow for ceremonials at the Feast of the Tabernacles. Myrtle wreaths adorned the brows of their magistrates and victors. The myrtle berries were desired not only for a delightful fragrance, but, dried, became a condiment, a relish, to be eaten with food.

"The willow hath a gift beyond the rest," wrote Pliny of its use in tying over poplars, hazel wands, and sundry vines; and he meant perhaps what are known as *Salix fragilis* and *salix alta*, or that other variety growing along the banks of the Jordan and its tributaries, the *Populus euphrates*; or the *N. O. Salicene*, this last being most plentiful.

The characteristic of the willow tree to grow near or upon banks of streams was noted by Ezekial and other writers of the Scriptures. In the parable of the two eagles and the vine, the first eagle "took of the seed of the land, and planted it in a fruitful field; he placed it by great waters, and set it as a willow tree" (*Ezekial* 17:5). The Hebrew *caphcaphah* is a generic term, and yet the Arabic word for the willow is *safsaf*, and lends weight to the statement in this rendition of the passage.

The willows by the water courses, and the Brook of the Willows on the borders of Moab are mentioned in *Isaiah* (44:4; 15:7), the Brook being generally conceded to be the brook Zered which bounded Moab on the south and ran into the Jordan River or the Dead Sea. Willows are named among those trees the branches of which shall be cut at Feast times. The Hebrew word here is *grabhah* and refers, it is believed, to a kind of white poplar (*Leviticus* 23:40).

(Continuing on page 129)



The Feast of the Tabernacles, where the palm, willow, and myrtle trees were used for ceremonials



Moses' spies brought pomegranates from Eshcol to the Children of Israel waiting in the Wilderness of Paran that equalled the single cluster of grapes which it is recorded required two men to bear between them on a staff

WHAT IS TO BECOME OF OUR NORTHERN ELK HERD?



by WILLIAM RUSH



HE idea generally prevails that the Yellowstone National Park has always supported large numbers of wild animals, especially elk. There is ample evidence to show that this idea is not based upon facts. According to a recent bulletin of the Roosevelt Wild Life Forest Experiment Station, the Government Hayden Survey of 1871, which employed professional hunters to furnish the party with meat, reported: "Our hunters returned, after diligent search for two and a half days, from their camp at South Arms, Yellowstone Lake, with only a black-tailed deer which, though poor, was a most important addition to our larder." This is the only animal mentioned in the Hayden report.

The party conducted by Captains Barlow and Heap, army engineers, that same year of 1871 had better success. The bulletin continues: "This party of fifteen were in the Park about five weeks and evidently recorded every animal seen. Captain Barlow's report for July 23, 1871, says: 'One of the men killed a large brown bear and three cubs. The latter were brought in and served our mess with delicious steaks for several meals.' Most eloquent of the paucity of game animals is the fact that a party of fifteen, all armed, and some at least expert shots, allowed their supplies to become 'just exhausted' eight days

before the end of the trip and had to send back for more food. Yet this party covered a good deal of territory never before visited by a white man, so far as we know.

"In 1873 Captain William A. Jones, army engineer, led a party of thirty-one men into the Park and remained thirty-one days, visiting many new and remote sections. Yet this party also had trouble finding game and were soon so short of rations they had to send a party post-haste to Fort Ellis, a hundred miles away, for a pack train load.

"A party of visitors in 1874 led by the Earl of Dunraven . . . all of its members except the cook, were experienced hunters . . . all hands hunted two days in the upper end of Hayden Valley where thousands of elk summer now. But Dunraven says: 'Not a single fresh track and nothing whatever eatable to be seen.'"

Several other instances are cited in the bulletin of travelers in the Park prior to 1878 reporting absence of game. The elk were progressively exterminated on practically all of their range in the United States, starting with the Colonial settlers and reaching a climax simultaneously with the slaughter of bison in the West. But a few small remnants remained in

Montana in 1880, and it no doubt was one of these small herds which was crowded back into Yellowstone Park by



United States Forest Service

A bull elk, dead from starvation, on the Absaroka National Forest in Montana



What happens when snow covers the grazing range of the northern elk herd on the Montana Bison Range. The hungry animals are forced to paw the snow from small bunches of white sage for food

the settlers and their herds of domestic stock, that furnished the nucleus for the present herd.

Hunting was allowed in the Park up to August, 1886. C. B. Scott, one of the old timers at Gardiner, Montana, has told me some interesting stories of early day hunting in the Park. He said elk were very rare in the early eighties along the Cooke City road, where thousands of them can be seen now during eight months of the year. He told me of a hunter who killed six elk near Specimen Ridge in 1883. Great excitement prevailed throughout the whole upper Yellowstone Valley at such a wonderful bag. According to Mr. Scott, the first elk to be seen near Electric, Montana, which is in the heart of the present winter elk range, was an old bull in 1889, the sight of which aroused great curiosity on the part of the local people.

From the best information obtainable from old settlers, there probably were not more than four thousand elk in the northern Yellowstone herd in 1890. On excellent range and under complete protection this herd increased rapidly until the winter range in the Park became overstocked and the migrations to the lower range outside the Park began. The first large migration out of the Park occurred in 1911 and resulted in a heavy slaughter by hunters for meat, a somewhat lighter slaughter by tusk hunters and an

extremely serious loss by starvation in the spring. Since 1911 there have been at least six heavy migrations, each of which has brought serious loss to the herd. The winter of 1919-20 reduced the numbers to about one-third through hunting and starvation.

The herd probably reached its maximum number of about 35,000 in 1914, dwindled to 17,400 in 1917, and to 7,000 in the spring of 1920. The question of whether the northern herd intermingles with the Jackson Hole herd on a common summer range has never been settled. The general opinion of men most familiar with the problem is that the two herds are separate and distinct and that but very little, if any, intermingling takes place. If this is true, the fluctuations in the northern herd have been very wide.

The elk problem has been the subject of local, state, and national discussion for a number of years. Extremists, varying from the organization or individual who would have all domestic stock removed from the National Forests and absolute protection given the elk, to the people who would have every herd of elk slaughtered and the range used for domestic stock, have clamored for their respective viewpoints for the past two decades.

The Forest Service, recognizing the importance of preserving this relatively large herd of game animals, has gradually extended the "closed to grazing for game" area north and west of the Park from 90,200 acres in 1908 to about 295,000 acres in 1927. This area, while not greatly augmenting the winter range, holds a certain number of elk at a much shorter distance to the winter range, insuring an earlier and larger migration out of the Park on to the hunting grounds. It might be stated here that hunting has been recognized as the only practical method whereby the increase of the herd can be utilized.

In 1916 the so-called "Elk Patrol" was put into effect by the combined efforts of the State Game Department, the Park Service, and the Forest Service, chiefly to stop the nefarious practice of tooth hunting. The known kill



Heavily browsed by elk on the Wyoming Refuge, these aspen trees are sprouting from the ground

Photograph by Smith Riley

for teeth alone during the previous winter was in excess of five hundred elk, mostly bulls, and had been exceedingly high in previous years. The success of the "Elk Patrol" is attested by the fact that an average of but twenty-eight elk yearly have since been killed out of season both for teeth and for meat.

A few years later, the Graves-Nelson plan was inaugurated which outlined as one of the fundamental principles of the elk herd management, the acquisition by the government of the lands between the Absaroka and Gallatin Forests south of Yankee Jim Canyon. The Act of May 26, 1926, added this area to the two Forests and provided

appropriating \$150,000 to cover the government's share of the purchase, and it is expected that private funds will shortly become available, thus making possible completion of the purchase.

The very pertinent question of how large a herd of elk the government should maintain, and why, has been asked.

It has been shown that, from an economic standpoint, a small herd in a large preserve like the Yellowstone Park is a complete failure. The numbers increase rapidly until the range is overstocked and starvation reduces the numbers back to a small herd. Outside of the fact that starvation is unsound economically and an wholly inhuman method of



The elk herds as they now exist are unique in that they are the largest herds of big game animals in the United States, but their size should be limited to the carrying capacity of the winter range, with a broad margin left for unusually severe weather, in order to safeguard against the horrors of starvation and its attendant ills—disease and parasites

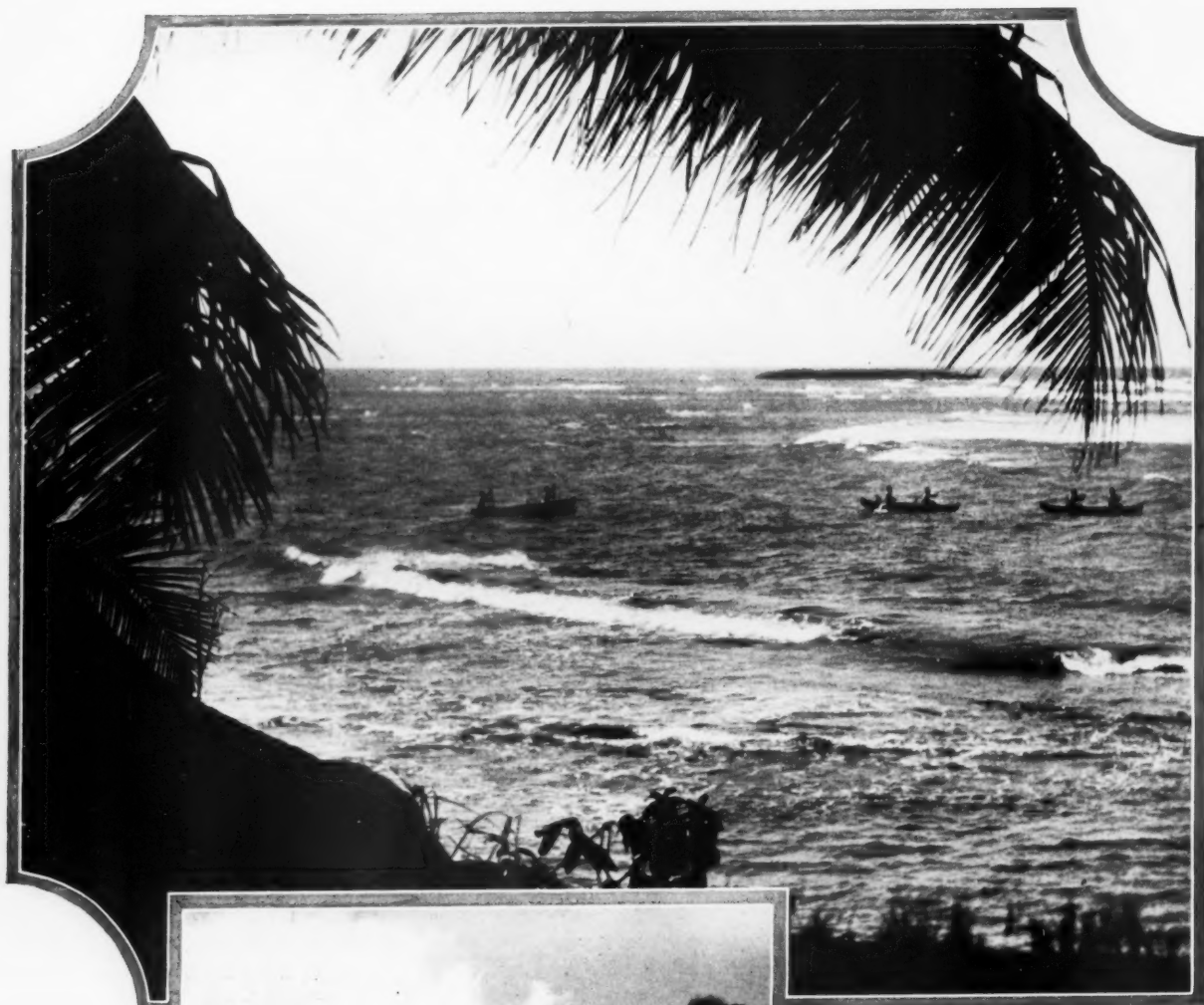
for the exchange, purchase and acceptance of donations of land within this area. This act did not, however, make any moneys available for the purchase of private lands within the area.

Game enthusiasts of New York formed the Game Protection Corporation a few years ago with a capital of \$125,000 to be expended for the purchase of private lands within this elk range to be donated to the government. To date this corporation has acquired about 990 acres at a cost of \$28,000 and the government has acquired through land and timber exchanges 1,473 acres at a cost of \$11,820. The complete plan contemplates the acquisition by the government of 46,000 acres of privately owned lands at a cost of about \$300,000, this sum to be raised fifty per cent by private donations and fifty per cent by federal appropriations. Congress last spring passed an act

disposing of surplus wild life, this system is a dangerous one in that parasites and disease may fasten upon the remnants of such a weakened herd and wipe them out completely. This matter of overstocking is an inherent weakness in all large game preserves, but in the case of a National Park it is much more difficult to control in that it is neither desirable nor practicable to allow the killing of large numbers of game animals in a National Park. Here the only solution seems to be to get the elk out of the Park and allow hunters to kill the surplus over and above what the range will support.

Shipping of elk from this herd to stock other areas has often been advanced as a means of keeping the number within proper limits. Years of experience has proved that this method fails to meet the problem. From 1892 up to and including the 1928 shipments to February 1, 3,300

(Continuing on page 125)



Below the

Photographs by H.

FOR those who would retreat before
 ing snow of the North, there is a
 flowers, of adventure and romance, just
 you go, whether it be Florida, the West
 of the tropics is there. There is surf
 moods and colors of tropical seas intriguing;
 palm-fringed shore lines for those who
 luxurious surroundings. Or perhaps one
 blue sea and seek thrilling adventure in
 where forests of gay colorings and alluring
 little creatures of tropical wild life. The
 gotten when one explores, in a native
 whose banks are lined with beautiful



Snowline

Armstrong Roberts

the frigid blasts of Winter, and the flurry-land of exquisite charm, of sunshine and below the snowline. It matters not where Indies, or Southern California, the charm boating for those who find the changing there are modern and palatial resorts on would keep contact with a busy world in would dispense with the moods of the the mysterious jungle-blanketed interior, tree growth and vegetation house strange cold, wintry blast of Winter is soon for-boast, the silent mysterious tropical rivers, palms and moss and flowers of the jungle.



To Fireproof National Forests

Congressman Englebright of California Introduces Bill to Provide Much-Needed Fire Protection for Federal Forests

By THE EDITOR

TO provide the Forest Service with funds amply sufficient to protect the National Forests from the wasting ravages of forest fires is the purpose of a bill introduced in Congress on January 6 by Representative Harry L. Englebright, of California. That the measure will have nation-wide support is presaged by the approval already given it by many organizations, including The American Forestry Association, and by the growing concern throughout the country over the failure of the Federal Government to provide the protection needed to stop tremendous forest, range, and scenic losses to which the National Forests are annually subjected.

The Englebright bill (H. R. 16078) would make available "for the construction and maintenance of fire lanes, telephone lines, cabins, lookout houses, fences, fire prevention roads and trails, and other improvements necessary for the proper and economical protection of the national forests" the sum of \$4,500,000 for each of the fiscal years 1931 and 1932; \$4,200,000 for the fiscal year 1933; and \$4,000,000 annually thereafter. Of these amounts the Forest Service would be authorized to expend not to exceed three million dollars annually in building the many miles of roads and trails necessary to assure efficient fire protection to the more inaccessible and undeveloped portions of the forests. The bill also would authorize a small annual appropriation for developing the grazing resources of the forests.

Representative Englebright has let it be known that he has not introduced this bill merely at the request of someone else, but that it reflects his own conviction, after studying the situation for two years, that the time has come when the Federal Government must face squarely and unequivocally the problem of saving the forests from fire. "I believe that neither the public nor Congress is fully alive to the extent to which fire is eating into these resources of the National Forests," said Mr. Englebright in

an interview with the editor of this magazine. "In the last twenty years an average of 870,000 acres a year has been burned in the National Forests.

This represents a yearly loss of timber amounting to 886,500,000 feet with a lumber value of \$27,000,000.00. I estimate that these fires have also exacted a forage loss of over \$780,000.00 annually. Losses equally great have been placed upon private individuals owning land and property within the National Forests. The figures mentioned do not, of

course, include the replacement value of timber and forage destroyed by fire, or a valuation of the fire damage to water supply, scenery, recreation, and all the other values inherent to the national forests. The government is spending from fifteen to twenty million dollars a year to develop and administer the national forests, but failure to supply the few millions needed for the specific purpose of assuring complete fire protection lays open these investments and the national forests themselves to periodic dissipation during bad fire years which the government is not equipped to meet. Considering the tremendous public and economic values represented by the national forests

and the current expenditures of public funds therein, the present policy of the Federal Government of withholding necessary fire protection is inexcusable. The national forests are the greatest conservation enterprise of this or any other country, and if the government cannot give them the protection needed to preserve them, then I think it should turn them over to the states in the hope that they will better meet public responsibilities."



Rep. H. L. Englebright

MR. ENGLEBRIGHT'S BILL

Authorizing appropriations for the construction and maintenance of improvements necessary for protection of the national forests from fire, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That there is hereby authorized to be appropriated for expenditure under the direction of the Secretary of Agriculture, for the construction and maintenance of fire lanes, telephone lines, cabins, lookout houses, fences, fire-prevention roads and trails, and other improvements necessary for the proper and economical protection of the national forests for the fiscal year ending June 30, 1931, \$4,500,000; for the fiscal year ending June 30, 1932, \$4,500,000; for the fiscal year ending June 30, 1933, \$4,200,000; and thereafter \$4,000,000 annually, or such other amounts as Congress may hereafter provide. Of the foregoing amounts not to exceed \$3,000,000 annually may be expended for the construction and maintenance of roads and trails for fire-protection purposes, and \$200,000 may be expended annually for the construction and maintenance of boundary and range division fences, counting corrals, stock driveways, and bridges, the development of stock-watering places, and the eradication of poisonous plants on the national forests, and in cooperation with the Biological Survey, or otherwise, for the eradication and control of range-destroying rodents on the national forests.



EDITORIAL

"Deforested America"

AS was expected, George P. Ahern's "Deforested America," printed last month and widely distributed throughout the United States by Gifford Pinchot, has drawn both adverse and favorable comment. The author has been criticized on the grounds that his material is fragmentary and incomplete and that some of his conclusions are unfairly based upon generalities instead of upon clearly established facts. Fear is expressed in many quarters that the pamphlet will create a feeling of antagonism between private and public forest interests at a time when the two groups are attempting to work out cooperatively the many intricate problems inherent to the forest situation. On the other hand, there are those who hold that Major Ahern's pamphlet is a timely exposé, needed to awaken the American public to the fact that the forest situation is not being adequately met by present efforts and that it will serve to put upon their guard those who are inclined to confuse the public by unwarranted exaggeration of what is being accomplished.

Under date of December 29th, Secretary of Agriculture Jardine, commenting upon Major Ahern's pamphlet, admits that the intricate economic problems involved have masked the true seriousness of the forest situation. He does not share Major Ahern's belief that no progress is being made nor would he withhold full public credit from any efforts made by private owners to better handle their forest lands. Despite hopeful advances, however, the Secretary is emphatic in expressing the view that the forest situation is still far from satisfactory and that the time is ripe for energetic and far-reaching efforts by all agencies concerned. He expresses the belief that the cooperative method of meeting the many problems involved should be continued on a much larger scale by the public and the land owners. "The grave public consequences of continued deforestation," the Secretary declares, "make it imperative that the government, the states, and the timberland owners join in a more positive, constructive, and aggressive effort to end the evils of forest devastation and to lay the ground work for intensive forest culture."

Whatever may be the shortcomings of Major Ahern's material, his charge that the forest situation is not being handled in the large way it deserves is unquestionably well grounded. If it serves to turn the eyes of the nation upon the real situa-

tion existing in the nation's forest estate and to bring about constructive handling by the public, its publication will have been abundantly justified. It is to be regretted that the author offers no clear or constructive solution, although one draws the conclusion that he favors scrapping the present cooperative method and substituting for it some form of drastic government control. Such a course at this time might easily lead from the frying pan into the fire. There is no overnight cure for the forest situation. It involves a complexity of problems, each of which must be dealt with in relation to the whole situation and the myriad contacts of forests with American life and industry.

Our forest problems cannot be solved by one group with eyes upon its own interests. Nor can the federal government arbitrarily legislate forestry into practice on more than 300,000,000 acres of privately owned land. With three-fourths of the forest land in the United States in private ownership, American forestry must have the interest and active participation of the land owner and behind him the interest and constructive support of the American people. Public interests come first, as they always do in any problem in which the interests of industry on the one hand and those of the public on the other hand are inseparable. Responsibility rests as heavily upon the public as upon the land owner because many of the present obstacles to the spread of private forestry can be removed only by intelligent public action.

It is too early to say that the failure of the present method of cooperative action in meeting the situation is due to the method. It is more to the point to say it is due to the lack of magnitude of the effort and to the lack of political and industrial statesmanship in its leadership. Neither the foresters, nor the lumbermen, nor the federal government, nor any other agencies have an adequate program of relief or one sufficiently imperative to arouse the American public to deal with our forests in the large, constructive way they demand. So long as we dally with the forest situation, we cannot expect Congress or the public to do otherwise. It can be permanently and successfully relieved only by national handling, and until it is laid before the American public in the same dramatic way that farm relief and other great economic problems are, neither adequate progress nor ultimate solution can be expected.

Man of the Hour

MR. HARRY L. ENGLEBRIGHT, member of Congress from California, has thrown down the gauntlet of federal complacency in respect to fire protection of the National Forests. The time has come, he declares, when Uncle Sam must either provide adequate fire protection for these great public properties or else turn them over to the states in which they are located. Vast sums, he points out, are being spent by the federal government to develop and administer the National Forests but vaster sums are going up in smoke because Congress continues year after year to withhold the few million dollars needed to make the forest and the public investments therein safe from fire.

In the December issue of this magazine, former Chief Forester William B. Greeley laid bare the deplorable weaknesses of Uncle Sam's plan for the protection of the National Forests. Speedy completion of this plan, he emphatically declared, is one of the things "that must be done" even if other forestry developments have to wait. Readers of his article, no less than the twenty million people who annually use the National Forests for business and recreation, will be gratified to learn that Congressman Englebright has stepped into the breach. On January 9th, he introduced in the House, of which he is a member, a bill authorizing the appro-

priations needed to provide adequate fire protection for the forests. This is not a bill introduced by request, Mr. Englebright explained, but one which embodies his own convictions and one which, with the help of friends of forestry, he hopes to carry through to enactment.

Those who know and appreciate the National Forests and the vital need of better protecting them from fire, will hail Congressman Englebright as the man of the hour. For want of a champion and a leader on Capitol Hill, fire protection for the National Forests has gone begging for more than twenty years with the result that timber of a lumber value of over \$500,000,000 has been claimed by fire. Congressman Englebright, with a clear understanding of the lamentable situation and an aggressive determination to remedy it, promises to supply the leadership and statesmanship that has so long been needed in the ranks of Congress. He need have no fear but that individuals and organizations throughout the United States will rally to his support. Already the largest organization of his own state, the California Development Association, is strongly behind his measure, and he may rest assured that it will have the fighting support of The American Forestry Association until the task has been done.

The Plague of the Insects

IN the United States today there are insects whose ravishing ways might well have earned for them a place among the plagues of Egypt in days remote. These are the pine beetles of our western forests, which, with other forest insects of less renown, consume \$20,000,000 worth of American prosperity every year by destroying five billion feet of timber.

The enormity of the loss attributed to this army of silent tree killers is staggering. They destroy two-thirds as much of the nation's wealth each year as do forest fires, yet funds for their control are less than one-fiftieth of those for forest fire control. These insects destroy timber equal to one-fifth of the wood produced yearly in the United States, or one-eleventh of all the wood produced in the world.

Whether the popular mind accepts it or not this devastation is bordering on a plague, if we are to apply the term as it was applied in ancient Egypt. The greatest difference appears to be that ancient Egypt took measure of its plight and steps for a remedy, while we of many generations of growth have allowed it to come upon us unnoticed. This is especially true of those whose power it is to direct the brains, blood, and gold of the nation. An appropriation of \$194,000 was made available during the present fiscal year for the study and control of all forest insects. Of this amount less than \$42,000 was devoted to the control of the

pine beetle. It is like sending a company out to battle a regiment, or paying premiums to a defunct insurance company because its rates are dirt cheap.

The greatest need in our insect situation today is to learn more of the life habits of these devastators to the end that more effective methods of control may be applied. More efficient methods must be developed than felling and burning individual trees that have been victimized. The McNary-McSweeney bill authorized an increase of \$16,500 for research on insect affected forests, but like several other forest research authorizations this was cut out by the Director of the Bureau of the Budget. If the nation is to ward off this threat of forest scavengers more aggressive action is necessary. The paucity of present appropriations reduces efforts of control to mere sharp-shooting.

These destructive insects recognize neither limits nor boundaries, for their march has received little resistance. At the present time the pine beetles, not content with their invasion of the forests of the Northwest, are threatening the Yellowstone National Park. If the "plague" of the insects is to be dealt with successfully the gold of the nation must develop through research effective methods of control. Until this is done the pine beetles and their cousins are in a fair way to become as destructive to America as were the locusts to ancient Egypt.

The Abraham Lincoln National Park

By **FREDERIC M. SACKETT**

United States Senator from Kentucky

ABRAHAM LINCOLN, the martyr President, was born in a log cabin typical of the pioneer era on a farm in Larue County, Kentucky, three miles from Hodgenville, the county seat. This same old cabin has been taken down and rebuilt and returned to its original resting place, and it is remarkable that with all its vicissitudes it is still preserved intact. On the same farm, enclosed in a beautiful granite temple, insuring its protection from the elements, vandals and relic hunters, it stands today as a national shrine commemorative of the great President.

To the imagination of the late Robert J. Collier, of New York, the preservation of this early American pioneer home owes its inception. By means of an association of patriotic men and women whose names and gifts are preserved in the classical walls, an association was formed and the farm lands bought and the buildings erected. When Mr. Collier died, leaving a small fund as endowment for the upkeep of the improvements, the whole project was transferred by the Lincoln Farm Association to the United States of America and is today one of the National Parks under the control of the War Department.

In the laying of the cornerstone of the new building in 1909 by President Theodore Roosevelt, in the dedicatory service in November, 1911, by President William Howard Taft, and in the formal acceptance of the farm as a National Park by President Woodrow Wilson in September, 1916, we have linked with the immortal Lincoln three of the great Presidents of the United States.

Hodgenville, a pretty little country town in the Blue Grass State, nestles along both sides of the Jackson Highway, one of the great routes running from the Lakes to the Gulf, surfaced at last throughout its entire length as a model motorway. There pass over its right-of-way hun-

dreds of tourist automobiles, and the Lincoln shrine is one of the attractions to those Americans who hold tradition dear as it attaches itself to the name of Lincoln.

This brings a new life to the memorial. In earlier years but few people were able to visit the shrine but of late there has come a procession of motor cars running to hundreds daily to view the cabin in which Lincoln was born. With little tourist interest, improvements were not made that could accommodate the sightseers of this later period. No

appropriations had been made by the Congress to make this National Park available for tourist travel. Never was the drainage taken care of; never the farm cleaned of its briars and sassafras bushes; never had a road been built or parking space provided for those who linger for an hour beside the famous spring from which the boy who was to gain the affection of the nation drew the water as one of the daily chores of the little home. And so we have suggested



Memorial Building at Hodgenville, Kentucky, enclosing the cabin in which Abraham Lincoln was born

that it is the part of wisdom of this great rich country to preserve this shrine and make it attractive to those who through a visit can feel the impulse and the story of his life, can see his small beginnings and realize that his story means that America gives to every youth equal opportunity in life.

It is that principle which underlies the democracy of this Republic. The introduction of a bill in the Senate by myself, and in the House of Representatives by Representative Maurice H. Thatcher, of Kentucky, calling for an appropriation for improvements and preservation of the park, was designed to carry out the thought that the nation should put this home in order, furnishing the necessary funds to make it available to the people of the United States. The bill has met with the cordial approval of President Coolidge, who fully appreciates the value of our national shrines.

Notable Speakers on Program of Annual Meeting

With plans for the Annual Meeting of The American Forestry Association at Jacksonville, Florida, February 27 and 28, rapidly taking shape, announcement has been made that many notable speakers have been invited to attend. Among them are Roger Babson, world-known statistician and economist; Miss Martha Berry, of the Berry Schools, Georgia; Dr. John J. Tigert, President, University of Florida; Dr. Charles H. Herty, of The Chemical Foundation, New York; Dr. David Fairchild, famous plant explorer; Governor L. G. Hardman, of Georgia; and Governor Doyle E. Carlton, of Florida. Automobile field trips have also been arranged to the Southern Forest Experiment Station, at Starke, Florida, and to the Penney-Gwinn Farms, one of the most interesting philanthropic undertakings in land development and management in the South. The meeting will be held at the Carling Hotel, which has made special rates of \$3 a day for single rooms and from \$5 to \$6 a day for double rooms. Reservations may be made through the Association or by writing direct to the hotel.

"Fashion" for the Naked Savages

(Continued from page 69)

home, which was far over, near the Bolivian frontier.

So Rondon began with his telegraph lines which "unpacified" Indians promptly destroyed, often slaughtering the pioneers and wearing their heads as very special tokens of renown and luck. Thereupon Rondon recast his plans, and set the conciliation of the jungle-folk before everything else, knowing well the advantage of having friends and loyal helpers among these savages of the unknown, instead of furtive enemies who take to the tree-tops in their dim, noisome swamps.

Now behold the little soldier and his officers leaping ashore after a river voyage of lurid adventures. Crocodiles there were, showers of poisoned spears; the terrors of waterfalls, of Amazon storms and tidal waves, of man-eating fishes, of sickness and a hundred other dangers that no skill or experience can avert. Sometimes the savages assemble to meet him. More often they hide their women in the swamps and then take to the tree-tops, like the pygmies of the Congo forests. In any event, Rondon marches ahead unarmed, although in uniform. He knows that a hundred invisible bows are bent at him, with as many blow-pipes and bone-pointed javelins. Yet only once has a poisoned barb been let fly at him. It struck a brass button and glanced off the General's tunic.

Pitching camp in the jungle depths, Rondon devotes great care to the mosquito nets that guard his beds. A single hole may mean disease and death in the "Green Hell" of Amazonas. And by night there are vampire-bats that can suck the sleeper's blood without the victim feeling any pain. If the tribal chief and his wizard appear, well and good; Rondon explains his mission, gets a promise of labor for his telegraph work and soon makes friends with all, including the women and children, whom curiosity draws to the camp to receive the necklets and mirrors that delight these primitive souls.

But usually no sign of life is to be seen. The dense jungle is silent as the grave by day, and in the dark is filled with weird, mysterious and dreadful sounds as the jaguar and the boa join the birds, monkeys and other nocturnal creatures in the furtive riot of the Amazonian darkness.

Near the camp Rondon stretches a few stout wires from tree to tree, and on these he hangs cotton skirts and bodices, gay hats and handkerchiefs, coats and trousers. Then there are knives, hammers, saws, machetes and other useful or decorative gifts. Needless to say, hidden eyes see all this; and in the dead of night the naked wild-folk can be heard investigating and appraising the presents left for them in this way.

Before dawn the Chief and his braves may come into camp fantastically clad, often in female garb, and vastly more comic to behold than anything ever seen on the stage. There follows a palaver—an invitation to the General and his aides to a feast in the huge *maloca* or tribal hall, where a concert of nose-flutes and drums, with the maddest of dances

and strong drinks, will set the seal upon friendly relations.

But there are tribes that remain hostile for days and even weeks. Rondon's "bait" on the wires is left untouched. His stores are stolen, his river launches scuttled or burned, and arrows shot at his helpers from the impassable bush and swamps beyond. Yet Rondon persists, with never an attempt at reprisals. He varies the presents hung on the forest wires—and in time finds them gone—with native exchanges left in place of them; plaited baskets and pottery, jaguar-skins and weapons, drums, head-dresses of gay toucan feathers, strings of fish-teeth, and other articles. These Rondon accepts and renews his own offerings, this time more richly than before. After a few such exchanges the savage women come out of hiding, their Chief and his fighting men visit the camp, and all further misunderstanding is at an end.

General Rondon's objects and interests are manifold. He collects new animals and birds, insects and fishes, as well as plants and flowers and mineral specimens. As topographer and geographer he maps new rivers and lakes. As ethnologist he classifies these tribes, measuring craniums, obtaining photographs and making new dictionaries of the dialects used by the various tribes.

But before all this can be done with good-will and local aid these jungle people must be put in a good humor by the distribution of clothes, which is the first step in education and leads at last to the status of citizenship.

A big depot is therefore established, and decoys enlisted. Father, mother, and children of all ages—naked as the day they were born—disappear into the depot hut of wicker and thatch while a chattering crowd waits outside in a sort of gleeful terror. When the decoys come out, more or less completely clothed, their reception baffles description. Inquisitive hands all but tear off their garments in headlong haste to examine the material, and the beads and trinkets that go with it.

Shrieks of laughter, and cries of wonder or dismay greet other new recruits as these also strut out—often with dark legs thrust through coat sleeves and the tunic itself buttoned up around the hips. Funniest of all is to see the savage maiden in a smartly trimmed hat and a once-dainty dance frock worn the wrong way round, or even upside down.

Out in the jungle, or in noisy meetings in the huge *maloca* hut, there are still more diverting exchanges, which often leave the tribal wizard himself with no more outfit than a soft felt hat perched on his lank hair and a pair of tight shoes, which he realizes will protect his feet from poisonous snakes.

There is no mistaking the "uplift" produced in this way. Some men and many women at first evince fear of this "new skin." But when others have swaggered in gay cotton garments for a few days, the fashion spreads; and soon other tribes paddle down the great river to share in the wonders. In the general merriment, Rondon makes great headway with his scientific surveys, as well as with his engineering and

(Continuing on page 108)

Salvaging the Chestnut

By FRANKLIN W. REED



NE need not be old to remember when a large sack of roasted chestnuts was necessary equipment for an afternoon at a football game or a quiet evening at home before a roaring fire. Nor does one have to go back so far to recall the various uses for which the wood of the chestnut was considered indispensable. Within the limits of its range of growth, it has for years been a standard species for telephone, telegraph, light and power line poles; it is the only native wood whose tannic acid content is high enough to give it value to the tanning industry. It is claimed by some to have superior qualities as backing for veneers and as lumber for coffins.

Ever since the blight first fastened itself upon the chestnut, twenty-five years ago, the tree has been gradually exterminated on more than half of its northern range. One would expect that as the supply diminished the value of the tree for poles, lumber and tannic acid would increase, but this has not followed. So far as the chestnut goes, the old law of supply and demand has slipped a cog. Treated pine poles from the southern pine belt and cedar poles from the north and west have invaded its territory; tanning woods from the tropics have depressed the price of chestnut extract wood so that it can compete only in most favorable localities; other kinds of trees are being used successfully as backing for veneers and as lumber for coffins, so that what remains of the great chestnut family finds itself sick economically as well as pathologically. The problem of salvaging the remaining chestnut trees before it is too late appears almost as



Pole Chestnut which should have been cut before being entirely killed by the blight

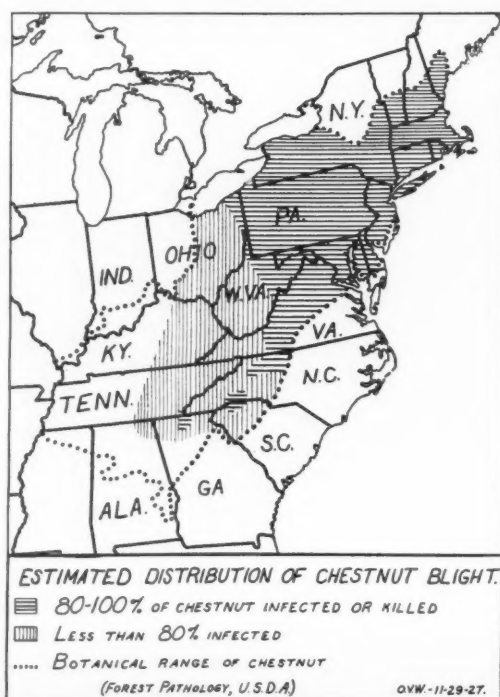
baffling as stopping the blight. After years of study, the pathologists reached the conclusion that there is no practical way to stop the blight and that the infection would move relentlessly southward until eventually our American chestnut will cease to exist in commercial quantities throughout its natural range. The entire range of the blight and its sure advance southward is shown on the map published with this article. The consensus now is that the infection throughout the chestnut region will be complete in from fifteen to twenty-five years and that within this period our remaining chestnut trees, estimated to contain upwards of fifteen billion board feet, will be killed. With the inevitable end in sight, two vitally important problems present themselves: first, that of salvaging what remains of this commercially valuable species either before it is killed by the blight or after it has been killed and before deterioration renders it unfit for lumber and allied uses, and, second, that of determining what must be done to fill its place in the forest.

The latter problem is the minor of the two because nature is already supplying the answer. As the chestnut dies and is cut and removed from the forest it has



Chestnut lumber salvaged from blighted trees in Fairmont Park, Philadelphia

been found that the other trees with which it has been growing in mixture are seeding in rapidly. The forests of the future will be lacking in chestnut but will carry an equal amount of other species, yellow poplar, oaks and white pine, some of which are even more valuable than the lost species. Nursery experiments have been carried on to develop blight resistant strains and to test out oriental species of chestnut which are naturally proof against the disease. Enough progress has been made to give hope that in a few years there will be nursery stock available for a limited amount of orchard planting for nut production, and for park planting, and for ornamental purposes. That it will ever be possible to replant on a commercial scale



the 35,000,000 acres of the natural chestnut range is extremely unlikely. As the native chestnut is killed out, its place must be filled by other species of industrial value.

The salvaging of the billions of feet of remaining chestnut doomed to be killed by the blight within the next ten or fifteen years is unfortunately making little progress. In spite of all the publicity on the subject, it is doubtful if more chestnut has been removed from the forest than would have been cut and utilized normally. On the other hand, one finds certain economic forces at work which already have so depressed the market and reduced the demand that they seriously threaten actually to prevent the salvaging of this important



A mature stand of pole chestnut, from sprout growth, ready for harvesting. Pathologists conclude that the blight cannot be stopped and eventually our American chestnut will cease to exist in commercial quantities throughout its natural range

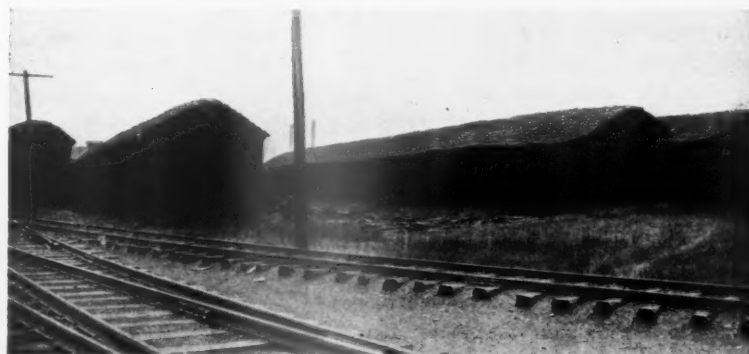
species before the blight-killed timber will have so deteriorated that its value for lumber or poles is entirely destroyed.

This cloud of economic gloom has settled over the chestnut with increasing thickness during the past ten years. In the boom period, during and immediately after the World War, the situation looked entirely different. The lack of shipping had practically precluded the importation of tannin woods from the tropics; the war had greatly expanded the demand for leather and, with it, the need for tannin extract. The leather manufacturers were forced to look to home resources to meet their requirements and chestnut extract wood assumed a value that gave a profit from handling under any and all conditions. With the readjustment period of 1921 and the contraction in the leather trade and the demand for extract wood, there came also a revival of shipping and of the importation of tropical tannin materials. The result was a radical reduction in the price of chestnut extract wood to the point where it can be cut and hauled only from the most accessible places, and then only if the operator is willing to work for meagre wages. This condition has prevailed for the past few years and there is no prospect of a change. As a result, millions of cords are destined to rot in the woods unless other forms of utilization can be developed.

The same story, with variations, can be told of chestnut lumber. The average market value is ruled largely by the price obtainable for the "sound wormy" grade, which constitutes such a large percentage of the total cut. Before the war this grade was of such low value that it was often difficult to determine whether the stumpage out of which it could be sawn was worth more for lumber or for extract wood. During the boom period, although acidwood increased enormously in price, lumber increased even more, and it was profitable to saw every log that could be brought to the mill. The production of chestnut lumber increased enormously and for a short period it looked easily pos-



Chestnut slabs which have been cut and piled in preparation for use in the manufacture of chestnut tannin extract



Bark ricked for extract manufacture. At many of the chestnut extract plants, both chestnut and chestnut oak bark are used



Rough fence posts of chestnut such as are often used in building wire fence. They are made from small trees and the tops of trees

sible to salvage all the sawtimber before it was ruined.

Aside from a limited use for such purposes as coffins and veneer backing, "sound, wormy" chestnut and the lower grades must compete in the market with the lower grades of softwoods, for crating and rough construction. When the west coast lumbermen began placing their product on the eastern markets, the sale value of chestnut suffered along with that of the eastern softwoods. Today there are operators who, even though they themselves own the land and stumpage in fee, leave their chestnut in the woods because the market price is less than the cost of logging and manufacturing.

If the Lumber Trade Extension Committee of the National Lumber Manufacturers Association is successful in its well planned efforts to revive and expand the demand for lumber, there is reason for hoping that chestnut will benefit along with the other species, and that a material amount of the chestnut sawtimber can be salvaged.

The third major use for chestnut is for telephone poles. Trees between ten and seventeen inches in diameter, with merchantable length ranging from twenty-five to sixty-five feet, are usable for poles if they comply with the requirements as to straightness and taper. Only a comparatively small proportion of the total stand, therefore, is usable for poles, but at the same time trees that will make poles are worth at least twice their value as sawlogs. Those stands which produce the greatest percentage of pole timber are usually second growth which has sprouted from the old stumps.

More satisfactory progress has been made in salvaging the pole timber ahead of the blight than with the sawtimber or extract wood. If it were not for the competition of substitute species, it would be reasonable to hope for complete salvage well within the time limit allowed by the blight. Unfortunately, however, the raising of prices to make possible the long rail shipments from western Carolina to New England and New York points brought also into the market creosoted pine poles from the southern pine belt, and cedar from the northeast, the Lake States, and even the west coast. The price depression resulting from this competition renders it possible to operate profitably only the more accessible chestnut stands.

The United States Department of Agriculture, in Bulletin 21, places the total stand of chestnut sawtimber in 1920 at 19,319,000,000 board feet. The United States Forest Products Laboratory, in July, 1925, gave the stand at 15,000,000,000 board feet. Both of these estimates include pole timber but exclude extract wood. The North Carolina Geological and Economic Survey published in 1925 an estimate of the remaining stand in North Carolina and the Southern Appalachians, compiled by E. H. Frothingham, Director of the Appalachian Forest Experiment Station, who computed the stand on a total of 33,000,000 acres to be 33,700,000 cords of extract wood.

Varying though the estimates of the remaining chestnut are, the fact remains that many billions of feet and many millions of cords of wood will have to be salvaged within

the next decade and a half, or hopelessly lost to the industries and people of the United States. Mr. Frothingham estimated that in 1925 the chestnut was being used and thus saved from the blight at an annual rate of 776,263 poles, 308,091,000 board feet of sawtimber and 104,268 cords of extract wood. There is no justification for assuming that subsequent production is keeping pace with 1925. All evidence points to a steadily decreasing annual consumption of all three classes of chestnut because of the competition of other pole species, lumber from the west coast and tanning materials from the tropics. However one may look at it, salvaging the chestnut presents one of the greatest utilization problems now confronting the American people. Its most discouraging aspect is that no one apparently is able to offer a constructive solution and forest utilization agencies are not attacking the problem with sufficient aggressiveness.

It is easy enough to make the pessimistic prophecy that if present tendencies continue over half of the chestnut pole and sawtimber now left will remain in the woods to be killed by the blight and to be reduced by ensuing deterioration to purely extract wood. This will add millions of cords to an already unusable surplus of that material which must eventually be wholly lost by decay.

Such a picture is a sad commentary upon the state of our forest affairs and our ability to adjust our wood supplies in order to meet utilization emergencies involving billions of feet of timber. For years the specter of forest shortage in the near future has been held up to the American people. Here at the very door of the populous East is a great volume of timber which must be harvested or lost. There are many agencies actively promoting better forest utilization, but all seem to have thumbs down on the chestnut, the greatest and most urgent utilization challenge of the day. Is it too big? Is it in fact unsolvable? The questions might well be raised, "Has the government, which has several agencies spending money promoting forest utilization, thoroughly studied and investigated the possibilities of utilizing the remaining chestnut? Have the industries through their Wood Utilization Committee really tackled this problem? Has Congress considered it as a situation of real national import in the future adjustment of our forest affairs?"

If these agencies mentioned above were to enter into an aggressive cooperative study of the salvaging possibilities, who knows but that a solution might be found? And any solution which will serve to make the remaining chestnut contribute, in whole or in part, to our future wood supply will be a constructive achievement. Every chestnut tree which can be salvaged before deterioration will perform a triple service—first, it will make room immediately for a new tree to grow and one which the blight can not kill; second, it will fill an immediate economic need, either as a pole to carry telephone or electric light wires or as lumber for one of many purposes; and, third, it may obviate the need of cutting some other tree which the blight can not kill and which will continue to grow to meet a greater economic need for wood in the future.



Department of Science Education

Conducted by ELLIS C. PERSING

Natural Science Department, School of Education, Western Reserve University

How Teachers May Use Current Articles in This Magazine to Supplement Nature and Science-Study Textbooks Will Be Outlined in This Column Each Month by Professor Persing

THE suggestions for using the articles in this magazine will be given in a form that can be used directly by students and teachers in the upper elementary grades, the Junior High School and Senior High School.

Textbooks and courses of study serve as outlines for the science work in grades one to twelve inclusive. These outlines of essentials are necessary and it is not our plan to displace textbooks in any field of subject matter but merely to suggest a wealth of supplementary reading and visual materials which will enrich the present course and relate it to the experiences of the pupils. We are certain that the materials found in *AMERICAN FORESTS AND FOREST LIFE* from month to month will help acquaint pupils and teachers with the world about us and help them to keep up to date on topics of our forests and wild life.

For Your Bulletin Board

Post the cover page in the center of your bulletin board where it can be enjoyed by all the pupils until you have other material to replace it. If you have not already started a picture file begin now. These beautiful nature scenes will fit into an ordinary letter folder or large envelope.

If you need visual science materials, the pictures in *AMERICAN FORESTS AND FOREST LIFE* can be used for many of the lessons dealing with plants and animals.

Elementary School

Indians—Red Signs and White Science by Clarence E. Bosworth (Page 85 this issue).

Here is a fascinating story of Indians today in the United States. What have you learned about the Seminoles by reading this article?

1. What signs do they use to tell the weather?
2. What had they prophesied about the hurricane that struck Palm Beach?
3. What has been the history of the Seminoles?
4. How are they living today?

Wild Animals—"What is to Become of Our Northern Elk Herd?" (Page 93 this issue).

When studying game animals read this story of how the elk live in Yellowstone National Park.

1. What is the origin of the present herd?
2. How long was hunting allowed in the Park?
3. What happened when the elk began to migrate in 1911?
4. What was the "Elk Patrol" of 1916?
5. How large a herd should the government maintain?
6. What is the elk problem of today?

Junior High School

Brazil—"Fashions" for the Naked Savage by Ignatius Phayre (Page 70 this issue).

Here is a thrilling adventure in the interior of Brazil. When studying plants and animals read what General Rondon tells us of wild life in the jungles.

1. What are the dangers of the jungles?
2. How do the people of the jungles live?
3. How did Rondon build his telegraph lines?
4. How did he make friends with the naked wild-folk?

Senior High School

Forests—What Forests Mean to Hawaii by Otis W. Freeman (Page 86 this issue).

You may be amazed at the area of protected forests in the Hawaiian Islands. After you have read about the uses of trees on these islands prepare a brief report to give before the class.

Industrial Forestry at Longview by J. B. Woods (Page 71 this issue).

In connection with your study of forest conservation you should be sure to read the plan of the Long-Bell Company. Prepare a report for discussion in your class.

Conservation—Living Lincoln Memorials by Louis A. Warren (Page 75 this issue).

An interesting article dealing with the trees associated with Abraham Lincoln. Plans for their preservation are given. On a map of the United States show the location of these famous trees.

What is to become of our Northern Elk Herd? (See page 93 this issue.)

From this article you will learn the origin of the herd, how it has been protected and the plans for the future. This will suggest the study of other game animals. Such topics as the open season, the laws protecting them, the animals themselves and their needs for protection might well be given time in the biology class discussion.

Plants for the Home Grounds—A little friend of the Trees by Alma Chesnut (Page 83 this issue).

While studying plants for beautifying the home grounds read the story of the Good Samaritan of the garden. What are some of the places in which *Pachysandra* can be planted?

Trees—Trees of the Bible by Adelaide Borah (Page 89 this issue).

This is the third article of this series and deals with the date palm, pomegranate, kharub, and myrtle. After you have read the story be prepared to tell the class the essential facts of each tree. How do these willows differ from those in America?

Salvaging the Chestnut by Franklin W. Reed (Page 103 this issue).

In connection with your study of forestry and plant diseases you will find many questions about the chestnut tree answered. Have chestnut trees been found that are resistant to the blight? What use is being made of the dead chestnut trees?

Forests—Vermont's Anchored Hills by Hugh Hammond Bennett (Page 21 in the January issue).

The importance of forests for flood prevention is shown in this article.

1. What kind of trees are found in the forests of Vermont?
2. What can be done by the state to prevent floods?

"Fashions" for the Naked Savage

(Continued from page 102)

natural history labors. Indians volunteer to cut down trees and dig holes for his telegraph poles. Workshops are set up; and this nucleus of civilization in the wilds grows and thrives in a friendly atmosphere, with the graphophone and telephone assisting in impressing these primitive people.

A telegraph school is built in a few hours, and natives enlisted as student operators. A fort is constructed, too, and officers sent up-stream to open other centers. On one occasion these last were met with a hail of arrows when about to land, killing two young lieutenants and gravely wounding four more. Here the tribe had heard fantastic tales about the strange "bewitchment" of their neighbors, and were determined to resist all such diabolic advances.

So it is perilous, difficult work, calling for surgical aid in case of wounds, and infinite precautions as trails are hacked through dense bush, or rivers forded where the cannibal-fish lies in lurk for blood. This creature is quite small, weighing from six to ten pounds, but is amazingly voracious. One of the General's soldiers, swimming a stream, was attacked by swarms of these tiny sharks, whose bulldog teeth do terrible execution in a few seconds. In this case the victim was rescued, but died the following day, with Rondon left to read the funeral service and put up another cross in memory of a faithful servant.

When the stock of clothes is exhausted the General returns to Manãos, on the Amazon, or to Porto Velho, on the Rio Madeiro, for further supplies. Food may give out, and he can "live on the country." When medicines fail, he falls back upon magical roots and herbs. Even when short of ammunition he can still spear fish and shoot game with the bow and blow-pipe of the wilderness. But "old clothes" Rondon *must* have, since no agent of "pacification" can replace them, not even steel knives, axes and saws which so delight the nude jungle peoples and simplify the toil of their women who do all the hard labor.

So goes the life work of Candido Rondon, whose name already figures on Brazilian maps as the pioneer of hitherto unknown jungle regions, to which the collective name of "Rondonia" has now been given by cartographers. His politico-social and scientific reports would fill a library.

"What is your trump card?" I asked of him as we sat together in his bureau in lovely Rio de Janeiro.

"Just a ship-load of old clothes," the General replied.

"With tribal religions, we do not muddle," he went on gravely. "Our work is to blaze a trail for the first elements of civilization. The only Bible counsel we adopt is that given to Ruth by her very practical mother-in-law: 'Wash thyself—and put thy raiment upon thee.'"

What Forests Mean to Hawaii

(Continued from page 82)

We left Honolulu in a tiny inter-island steamer one afternoon and hove to off Kalaupapa before daybreak. This is a leper settlement and occupies an isolated peninsula that juts into the ocean at the foot of a towering cliff. The superintendent drove us across the peninsula and after leaving his car we hiked for a mile along the shore under overhanging cliffs to Waikolu Valley where we turned inland and followed a trail through wet ferns, wild ginger and dense forests of ohia to the gauging station. A sampan manned by two

Hawaiians met us on our return and carried us along the coast to the other valleys. The scenery was magnificent. Strange-shaped rocks rose from the sea at the foot of perpendicular cliffs covered with clinging greenery, and white waterfalls cascaded down from their source in

In the March Issue— The Watersheds of New York City

By Sidney K. Clapp



city of New York, the metropolis of America, is doing this every day. Just what part the forests play in this Herculean task will be told for the first time in the March issue of *AMERICAN FORESTS AND FOREST LIFE*.

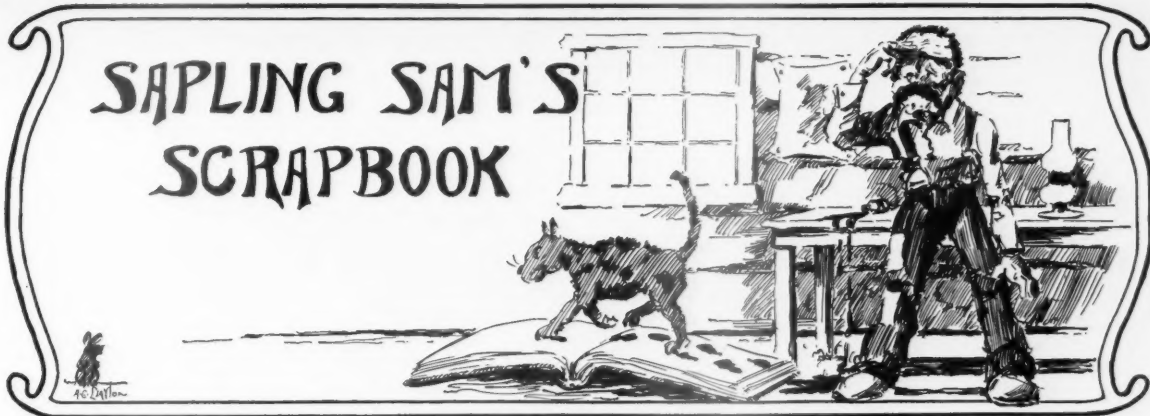
To supply an unlimited amount of water for the needs of six million people at a comparatively insignificant cost, is a task that seems incredible. Yet the

the clouds that shrouded the mountain tops.

The beauty of the Hawaiian Islands is inexpressible, and the wealth that lies in their soils cannot be calculated as long as there is water. But the unusual conditions of rainfall there and the rugged topography of the islands has made a major problem of utilizing and storing water. This is especially true since the depletion of forest areas. Where forests have disappeared, raging torrents have gutted the lands, leaving

only a panorama of waste land and devastation. Even the natives have been driven from these regions. Thus the recognition that has been given forestry in Hawaii. For if the forests are removed great sugar plantations will vanish and the land of eternal sunshine will become a lifeless land of deserted canyons.

SAPLING SAM'S SCRAPBOOK



Trying to Interpret Science

A scientist, says the *Detroit News*, has the theory that certain trees attract or repulse human beings, and are attracted or repulsed by them. There are apple trees, of course, that attract a boy, but I always thought it was the farmer who did the repulsing.

A Green Ranger's Prayer

God deliver me from this ghastly peril!

Smite the sheep with a plague so that their numbers may be easily recorded such as one or two. Make the wind stop blowing so that my lips may heal and while you're about it, warm up the country.

Oh! Lord, if you wouldst only make it rain so that grass would grow and cattle drink, thereby making permittees satisfied instead of desirous to move on to the wrong range. And if it won't inconvenience you, Father, make the rain a mixture of sulphuric acid so that the vegetation can laugh at the vain efforts of lightning and careless smokers who would reduce it to carbon.

Then instead of raising this moisture in the form of vapor, let



"I would like the telephone trees short."

the evaporation be brush from my timber sales. And, Father, can't you see what a benefit would be derived if you turned the rotten logs to blocks of salt, thus making every tree solid?

If it isn't asking too much, I would like the telephone trees short until after the wire is hung and please, Lord, make my climbers stick to the trees like you do the burnt rice in my kettles. Give each element that composes the telephone wire an affinity for each other so strong that it is impossible to separate it by falling trees or stretchers.

And, God, it would give me great pleasure if you would intimidate these stock associations. Inflict yourself upon them in the form of range management.

Give them eyes to see and ears to hear. Show me beyond a doubt, Great Father, that the world is a place to live in by reducing the reports to one a year in the form of a yes and no quiz. If there is any chance, make this one an oral report. Do this Father, and more. Have horses come into being with shoes on and pack mules easily caught. And after they are caught make them more movable. If you can't do any of this, Oh God, then endow me with the knowledge of an educator, mind reader, nurse, plumber, shepherd, cook, and what have you? If this is too large an order, please have one tiny freight train stop so that I can move from this agony. Amen.—*Southeastern Daily Bulletin*.

About to Stage a Conference

"Our telephone company'll hold a meetin' t'night t' try t' decide whether t' creosote th' poles t' scare off th' woodpeckers or white-wash 'em t' save 'em from pickled drivers." —Abe Martin in the *Indianapolis News*.

Of Interest to Anglers

The following report on the fish conditions in the Sespe Creek on the Ojai District of the Santa Barbara National Forest, in California, comes from a forest guard, according to the District News Letter:

"The creek's quit running and the ponds are dry, If it wasn't for the polliwogs, the fish would all die."

New Alibi

A certain traveler in Alaska, armed with a high-powered big game rifle, found it necessary to shoot some ducks for food. Finding that the bullets nearly made a total loss of the ducks when he hit them he solved his problem by selecting only ducks that were sitting on a sand bar, and then shooting, not directly at the ducks but into the sand near them. The spattered sand struck by the high velocity bullet killed enough ducks for his use.

This would be a fine alibi for others who hit the sand instead of the ducks, only they don't get any ducks.—S. S.



You and the Tiger

Strictly in line with the humane tendencies of our age is the proposal of a British society to protect tigers, says E. C. A. in the *Detroit News*. The tiger, they say, has been grossly maligned. It isn't a bloodthirsty beast that kills, wantonly, for sport. It is shy by nature, kills when it wants food, and is afraid of men.

It is of the utmost importance to remember these facts when traveling through the jungle. Should a tiger spring upon you, maul you, and eat you, you might imagine it is fierce and murderous. Not so. It is only hungry, poor beast. And it fears you—fears, perhaps, that you will thoughtlessly deprive it of its meal.

A true knowledge of this matter may make a great difference in your attitude toward a tiger at such times.

Forestry Legislation Now Before Congress

By G. H. COLLINGWOOD

Forester, The American Forestry Association

ECLIPSING in interest even the appropriation items which were considered by Senator McNary's Committee on Agricultural Appropriations is the bill introduced on the floor of the House on January 9, by Congressman Harry L. Englebright, of California. This bill follows directly along the lines proposed in Colonel Greeley's article, "Meeting the Red Menace," which appeared in the December issue of *AMERICAN FORESTS AND FOREST LIFE*. The bill authorizes an appropriation of \$4,500,000 for the year ending June 30, 1931, and similar sums for the two succeeding years. Thereafter, the sum of \$4,000,000 is suggested. The purpose of the bill is to provide for the construction and maintenance of fire lanes, telephone lines, cabins, lookout houses, fences, fire prevention roads and trails on National Forests to the end that forest fires may be kept under control.

The Agricultural Appropriation bill was approved by the House on December 19, and referred immediately to the Senate Committee on Agricultural Appropriations, of which Senator Charles L. McNary, of Oregon, is chairman. Hearings before this committee closed on January 11, and the bill was reported to the Senate January 16. Additions made by the House and recommended to the Senate exceed the recommendations of the Bureau of the Budget.

As it now stands, the Senate Appropriations Committee has recommended the full authorization of \$3,000,000 for the McNary-Woodruff Law, for acquisition of land for National Forests in the East. This bill made possible an appropriation of \$2,000,000 this year, part of which was used to purchase the Waterville tract in the White Mountains of New Hampshire. It authorizes an appropriation of \$3,000,000 for the next two fiscal years. On the basis of these authorizations the National Forest Reservation Commission has proceeded with plans for the acquisition of lands in the eastern half of the United States, and has gone so far as to consider additional purchase units in the Lake States and certain of the Southern States. This is an outgrowth of the program which developed during the investigations of the Select Committee of the Senate on Reforestation. In its report of 1924 the Committee recommended annual appropriations of not less than \$3,000,000 for the acquisition of lands for National Forests. Part of these recommendations were embodied in the McNary-Woodruff Law of April 30, 1928, but in spite of the very definite wording the Bureau of the Budget reduced this item from \$3,000,000 to \$1,900,000. If the Agricultural Appropriation bill passes

as recommended by the Senate Appropriations Committee it will justify the efforts of the past few months by The American Forestry Association.

Among the increases is the sum of \$100,000 added to the appropriation for forest fire co-operation under the Clarke-McNary Law. This was the result of an amendment introduced by Representative Scott Leavitt, of Montana, and brings the total recommendation of the House to \$1,400,000. This comes within \$200,000 of the amount requested by the National Forestry Program Committee and The American Forestry Association at the hearing before the Director of the Budget on October 11, 1928, and is \$200,000 above the appropriation for the present fiscal year.

For starting the cooperative survey of forest resources of the United States the appropriation was increased by \$15,000 to a total of \$40,000. The work is planned on the basis of an initial appropriation of \$75,000, and the added \$15,000 is a step in the right direction. The item for economic investigations of forest industries which will be started in the South has been increased by \$10,000, which brings the total up to \$25,000. An addition of \$6,000 was given silviculture investigations with the understanding that it will be applied to studies in connection with the production of naval stores at the sub-station at Starke, Florida.

On the whole, the forestry items were favorably received by the members of the House of Representatives, although that body acted according to its custom and cut the recommendations of the Bureau of the Budget for the Department of Agriculture as a whole by nearly half a million dollars. The Forest Service appropriations, however, were increased by \$131,000 and now represent an increase of over \$700,000 above those of the present year's appropriations.

On January 7, Senator Samuel M. Shortridge, of California, introduced an amendment on the floor of the Senate to increase the allotment for forest experiment stations by \$30,000, which will bring the total under this item to \$443,000. It is understood that this addition will be applied to the work of the California Forest Experiment Station at Berkeley.

At the same session, Senator Tasker L. Oddie, of Nevada, proposed to increase the appropriations for forest insect research from \$194,000 to \$229,000.

Senator Shortridge has also asked that \$20,000 be added to the allotment of improve-

ments on National Forests. He asked for this with the four National Forests of Southern California in mind.

On January 10, E. T. Allen of the Western Forestry and Conservation Association appeared before the Senate committee to present the needs for increased appropriations to permit greater participation by the Weather Bureau in studying weather conditions in relation to forest fire hazard, and predicting periods of unusual fire hazard.

He followed with an appeal for Senator Oddie's amendment to provide an additional \$35,000 for forest insect research. Mr. Allen also asked the committee to give serious consideration to the possibility of increasing the item providing for a cooperative survey of forest resources from \$40,000 to \$75,000. This would place the appropriation for this year in line with the program on which the McNary-McSweeney Law was based.

The Forester of The American Forestry Association appeared at this same session. He put the Association squarely back of Chief Forester R. Y. Stuart's Forest Service program, and supported the statements already made by Mr. Allen. The special reason for his appearance, was to call attention to the need for continuing the program of forest land acquisition in the East and the fact that the Bureau of the Budget had recommended an appropriation of only \$1,900,000 although the McNary-Woodruff Law expressly authorizes \$3,000,000 for the next year. It is hoped that Senator McNary's committee will recommend to the Senate the full amount authorized by the law.

On January 7 the House passed the bill (H. R. 15088) to extend the boundary limits of the Lafayette National Park in the State of Maine, and to change its name to Acadia National Park. This has been referred to the Committee on Public Lands and Surveys.

The Migratory Bird Conservation Bill, S. 1271, passed the Senate at the last session, was referred by the House Committee on Agriculture to the Bureau of the Budget and was returned on January 5. The Secretary of Agriculture estimates that \$75,000 will be sufficient for the first year, \$200,000 for the second year and not to exceed \$600,000 for the third year. This is understood to comply with the financial program of the President.

Efforts are being made to secure enactment of the Hope-Curtis bill, S. 4153, which authorizes an appropriation of \$350,000, for the creation of a permanent waterfowl refuge in the Cheyenne Bottoms in Kansas.

SMITH INDIAN

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Fire Pump

For Fighting Forest Fires, Brush Fires, Grass Fires, etc.



**HEAVY
BRASS
PUMP
5 GALLON
TANK
WITH LARGE
BRASS
STRAINER
AND BRASS
COVER**

Tank Furnished in Galvanized Steel or Solid Brass as Ordered

The New Indian Fire Pump is the last word in a Fire Extinguisher, for fighting Forest Fires, Brush Fires and Grass Fires

THE INDIAN TANK is curved in shape similar to a pack basket to fit the carrier's back. Pump is made of heavy brass and has brass valves, free from leather packings. One cylinder works back and forth inside the other cylinder. It throws a continuous, long-distance stream 50 feet with slow, easy pumping and may be directed to any position desired. Tank is provided on its top with heavy spring brass pump clip for conveniently carrying the pump in a wagon or automobile or when not in use. This is a patented feature and it keeps the pump from dangling about.

UNSOLICITED TESTIMONIAL LETTER

J. E. BUSHNELL, Grocer
Brattleboro, Vt.

May 17th, 1928.

94-98 Elliot St.
D. B. SMITH & CO., Utica, New York.

GENTLEMEN:

On May 3rd, with 3 INDIAN FIRE PUMPS, I, with two men and seven Boy Scouts bringing us water, stopped a very bad forest fire that had jumped several back fires and was being fought by about 50 men. It had burned over about 75 acres before I arrived with the pumps.

We used the pumps in the face of a wall of flame driven by a high wind and in about 1 1/4 hours had extinguished the fire on a mile front. The fire did not cover ten acres more after the pumps arrived.

The fire chief of Brattleboro and the fire warden of Vernon saw the fire pumps in action and were much impressed with the way that they worked.

Money would not buy the pumps that I have kept for myself if I could not buy more of them. Am trying to sell the fire department a supply of the pumps.

Yours truly,

J. E. BUSHNELL.

ARROW FIRE PUMP

THE ARROW FIRE PUMP shown at the right is a heavy built galvanized steel tank holding 5 gallons with an all-brass double-action pump with hose and nozzle, and carries the National Board of Fire Underwriters' approved label. Highly adapted for camps, summer homes, lumber mills, summer hotels, warehouses, etc.

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View showing the easy carrying position of the Indian. Pump is instantly removed from carrying clips for use.



The Indian ready for use. May also be carried about in this position. Tank is curved in shape to fit the carrier's back.



The Indian Galvanized and Brass Tanks are both equipped with large diameter brass strainer and cover, for quickly filling tank. Strainer prevents any sediment from entering tank.



ARROW FIRE PUMP
Approved by National Board of Fire Underwriters.

Around the States

With The American Forestry Association

Albright Succeeds Mather as National Park Head

Horace M. Albright, for the past nine years superintendent of Yellowstone National Park, has been appointed Director of the National Park Service to succeed Stephen T. Mather who recently resigned because of ill health.

Mr. Albright has been associated with the Department of Interior since 1913 when he was appointed assistant attorney, in charge of National Park matters. When Mr. Mather was appointed Director of the National Park Service in 1917, Mr. Albright was named Assistant Director. Two years later he was made Superintendent of Yellowstone National Park and Field Assistant to the Director. While holding this position he devoted much time to the handling of general park problems, with special reference to legislative matters and conferences with the operators of the public utilities in the various parks.

A native of California, Mr. Albright was graduated from the University of California in 1912. He is a member of The American Forestry Association, the American Society of Mammologists, American Bison Society, the Boone and Crockett Club, and the Trail Riders of the Canadian Rockies.

Mr. Mather, who is also a native of California and a graduate of the University of California, devoted his early years to news-

paper work on the *New York Sun*. In 1915 he was appointed assistant to the Secretary of Interior, in charge of National Parks, and when the National Park Service was created in 1917 Mr. Mather became Director.

The recipient of several honorary degrees, Mr. Mather was awarded the gold medal of

New National Forest District Created in Lake States

Creation of a new National Forest District to embrace the States of Minnesota, Wisconsin, and Michigan has been approved by Secretary of Agriculture W. M. Jardine.

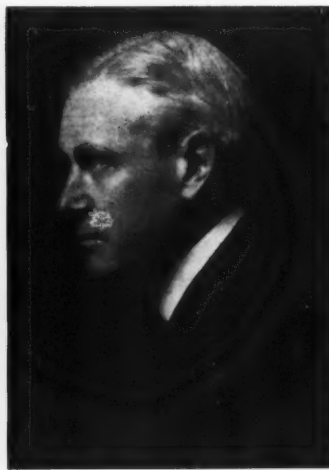
The new Lake States District, to be known as National Forest District No. 9, already contains ten National Forest units with a total of nearly 1,200,000 acres of government land. In recognition of the acute need which exists in this region for the reclamation of large areas of land adapted to timber production but at present denuded and unproductive, the National Forest Reservation Commission has approved a program contemplating eventual acquisition of an additional two and one-half million acres of land in the three states.

Secretary Jardine also announced the appointment of Earl W. Tinker as District

Forester in charge of the new Lake States District. In the United States Forest Service, he has served as Supervisor of two National Forests. As Assistant District Forester of District 2, Mr. Tinker has supervised the land exchange and acquisition work of the Forest Service in the Lake States for the past several years. He is a native of Michigan, and a graduate of the Michigan State College of Forestry. Temporary District headquarters have been established at Madison, Wisconsin.



HORACE M. ALBRIGHT



STEPHEN T. MATHER

the National Institute of Social Sciences in 1926, and the University of California, from which he was graduated in 1887, conferred upon him in 1924 the honorary degree of Doctor of Laws.

He suffered a paralytic stroke in Chicago early in November, and since that time has been confined to a hospital there.

Secretary West, in accepting Mr. Mather's resignation, expressed his sincere regret and paid high tribute to his patriotic, unselfish work in the public service.

"Reforested America"

Co-Operation is Achieving It

THE National Forestry Policy is one of co-operation between the national and state governments and timber land owners. It was first expressed legislatively in the Clarke-McNary Act. It had been the informal policy of the nation for years before.

Recently there has been set on foot a movement to abandon this policy of co-operation and substitute the "Big Stick" of statutory compulsion.

The present policy is American and democratic, the "Big Stick" policy is European and autocratic.

Under the co-operative policy the U. S. Forest Service has had for ten years the solid support legislatively, administratively and morally of the lumber and other forest industries. The utmost harmony has existed. For fire fighting purposes the timber owners and the government have practically fused into one successful organization. Forestry practices are gradually being adopted, timber owners are everywhere considering whether they are commercially applicable to their particular situations.

On all sides there is a disposition to weigh carefully the economic possibilities of reforestation.

The great associations of the lumber industry are actively promoting forestry and the commercial conditions that will make it possible.

They realize that profitable forest operations are the first essential of reforestation by private owners. They are sources of forestry education and inspiration to their members.

Interest in and practice of forestry have already got so far that it may be said with confidence that the outlook under co-operation is that within the next decade every acre of timberland owned by large operators that is capable of successful commercial tree growing will be doing it.

Why destroy the policy that is achieving these results?

Write for a copy of "Reforested America," a reply to "Deforested America."

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Jardine Sees Critical Problem in Continued Deforestation

The grave consequences of continued deforestation make it imperative that the Federal Government, the States and the timberland owners join cooperatively in a more positive and aggressive effort to end the evils of forest devastation, Secretary of Agriculture Jardine stated, in commenting on the pamphlet "Deforested America," recently prepared by Major George P. Ahern.

The Secretary expressed the belief that cooperation between government and industry is applicable to the forest situation on a much larger scale than it has hitherto been applied, but stated that if the cooperative method proves inadequate, national security will require that it be supplemented or supplanted by more drastic measures. He pointed to the progress made in forestry under the cooperative forest fire control program of the Federal Government, States, and private land owners. In this program both the States and many private land owners have worked loyally with the Government, he said, and progress is being made by some of the more progressive lumber companies and land owners in the adoption of other improved forest practices besides fire protection.

"In spite of these hopeful advances," Secretary Jardine declares, "I want to record my view that the forest situation is still far from being satisfactory. It is my belief that the time is ripe for an energetic and far-reaching united attack on the forest problem by all agencies concerned. Not only should the Government continue its work as a forest land owner, but it should also greatly increase

the Federal effort to work out the cooperative forestry movement to its full possibilities. I mean by this that the public should undertake a far larger forestry program than it has undertaken in the past, especially in universal forest-fire control, in the purchase of public forests, and in forest research; and at the same time that timberland owners and the forest industries should assume a much larger responsibility and a more aggressive attitude toward the rapid adoption of better forest practices. It is not enough that we rely on the free play of economic forces or the slow growth of better practices by landowners. The basis of any effective program must be the full assumption and redemption of responsibility for wise land use by both the public and the landowners. The grave public consequences of continued deforestation make it imperative that the Government, the States, and the timberland owners join in a more positive, constructive, and aggressive effort to end the evils of forest devastation and to lay the ground work for intensive forest culture.

"We are, I am convinced, facing an era of more far-reaching cooperation between government and industry for the betterment of many economic conditions. I believe that this method is applicable to the forest situation on a much larger scale than it has hitherto been applied and to this end the Forest Service is working. If, however, this cooperative method proves inadequate national security will, in my opinion, require that it be supplemented or supplanted by more drastic measures."

Compton Makes Caustic Comment on "Deforested America"

In a statement issued on January 14, Dr. Wilson Compton, Secretary-Manager of the National Lumber Manufacturers Association, commenting on Major George P. Ahern's publication, "Deforested America," which was distributed throughout the United States by Gifford Pinchot, brands the publication as "a piece of immoderate propaganda in the interests of governmental regulation of the forest industries." Dr. Compton takes direct issue with Mr. Pinchot and Major Ahern, both on the question of governmental regulation and on the progress that is today being made through cooperation of industry and government in the protection and perpetuation of the forest supply. He declares that Mr. Pinchot's arguments as set forth in his open letter and his introduction in the publication is a restatement of

his familiar and periodic argument, rejected by the people of the United States, in behalf of government control of the lumber industry.

After pointing out some of the economic handicaps with which the lumber industry is today confronted, Dr. Compton declares that the proposals of Mr. Pinchot and Major Ahern would paralyze the lumber industry under the burden of bureaucratic regulations. Their's is not a formula for the salvation of the forests, he asserts, but a formula "for the vindication of the professional reformers who have prophesied forest disaster for so long that apparently they must now produce it." Negative forestry by appeal and resort to government control, he says, will not grow trees but will add effectively to the discouragements and obstacles of forestry enterprise. Dr. Compton's statement follows:

"Mr. Gifford Pinchot, former Forester of the United States, has addressed an open letter to the newspapers of the United States, in which he advertises a piece of immoderate propaganda in the interests of governmental regulation of the forest industries, entitled: 'Deforested America,' by Major G. P. Ahern, who for years has been an ardent advocate of the development of lumbering operations in the tropics for American markets. Mr. Pinchot then proceeds to restate his familiar and periodic argument, periodically rejected by the people of the United States, in behalf of government control of the lumber industry. A little later the Secretary of Agriculture issued a press release on 'Deforested America.'

"Meanwhile, the lumber industry and the timberland owners continue, in cooperation with the agencies of the government and of the several states, in adding to the substantial progress already made toward the protection and perpetuation of the forests. They believe that to perpetuate the forests and the wood-using industries is more important than to protect a handful of professional prophets of forest disaster from the disappointment of seeing the 'forest problem' gradually solved, at moderate cost, in the simple, direct, and practical manner now under way, instead of at immoderate cost, in the complicated, indirect, and impractical manner which they have chosen to advocate.

"Mr. Pinchot is, of course, well aware of the fact that even without the burden of bureaucratic administration, such as he has in mind, the lumber industry has been notoriously unprofitable for the last eight years, even though operating very largely on naturally grown timber. The fact that he, a man of large wealth and with a sentimental and professional interest in forestry from his early youth, has, himself, never engaged in the business of growing timber as a commercial enterprise, although he has insisted that others do it who are much less able than he, is, itself, an indication of the lack of vital or irresistible economic lure in such undertaking."

Dr. Compton then refers to the annual report of Chief Forester of the United States, R. Y. Stuart, as substantiation of his statement that a changed attitude has taken place among large timberland owners and the lumber industry toward forestry.

"The Forester of the United States recognizes also the public responsibility for the encouragement of private forestry and the handicaps now imposed by the public. Among them are ruinous taxation which frequently absorbs all new growth values; inadequate public assistance in forest fire prevention and suppression; and actual, although perhaps unintentional, encouragement of cut-throat competition in the distribution of lumber, which is disastrous alike to forestry and to the prosperity of the wood industries.

"To these economic handicaps should be added that of the constantly fiercer competition of other materials, which in some regions already have virtually deprived tediously and expensively regrown timber of paying markets for its products. Now come Mr. Pinchot and Major Ahern, respectively gentleman of leisure and retired army officer, having no responsibility—and offering to assume none—for the maintenance of the vital forest industries, the integrity of their huge investments, or the maintenance of the opportunities for employment which provides a livelihood to millions of our people, with the proposal, already discredited by convincing experience, to paralyze an already struggling industry under the burden of bureaucratic regulation. That is the economic formula offered the people of the United States by professional forest reformers whose views, notoriously, are not shared by the vast majority of the members of the eminent profession of forestry, who believe that it is more important that trees be grown in the woods than on paper.

"It is not a formula for the salvation of the forests. It is a formula for the vindication of the professional reformers who have prophesied forest disaster for so long that apparently they must now produce it. Twenty years ago Mr. Pinchot gave our forests only about thirty years—and still they are with us and promise to be forever.

"It is obvious, as the Forester of the United States and his predecessor in office, Colonel W. B. Greeley, have plainly said, that forestry by individual enterprise, like any other business, must pay its way. While the closet critics in Washington, unencumbered by any responsibility for the adverse consequences of their act, are harassing the forest industries the latter are steadily going

(Continuing on page 120)



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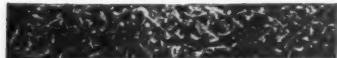
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The FOREST Post-Bag



So many letters of interest drop out of our mail bag each morning that the editors have decided to be generous with some of them. So—watch for the Forest Post Bag, learn what "they" think, and share our pleasure and profit. Comment on this column is invited.



From far-off Hawaii comes a Christmas greeting from A. M. Nowell, Secretary and Manager of the Sugar Factors Company, at Honolulu:

"We are a long way from Washington, D. C., but I would like to say that I am very glad to be a member of The American Forestry Association and wish that I had the time and the opportunity to visit some of the projects in which the Association is interested. To you and your associates, 'Aloha.'"

But opinions vary, for from Philip Dowell, of Port Richmond, Staten Island, New York, we hear:

"My last year of membership in the American Forestry Association was 1915, and my reasons for dropping membership in the Association you may attribute to an old man's whims. The move to make the magazine more 'popular' in contents and form made it less valuable to me, since I was better pleased to have it appeal to scientists and to continue its good work in the interests of conservation. Perhaps you are doing this now, but I confess I have not seen a copy of the magazine for some time, and so my opinion in regard to the present magazine can not be given.

"I can, of course, appreciate the stand taken by some, that by popularizing the magazine its influence for conservation might reach more people and thus extend its range of usefulness."

A letter from Coronado, California, tells us that Peter Barnhart is planting his last garden. Those who know of his work wish him God-speed on the last lap of a long and honorable career in his chosen field of botany. He writes:

"Tomorrow I leave this town for an indefinite length of time, to begin work on a botanic garden, twenty miles south of the border, in Mexico. The location is on the ocean front, about 200 feet from the beach and ten feet above high tide.

"The place is known as 'Shore Acres,' with a mile of wind-swept beach, lashed at times by sea billows so furiously that one is led to wonder why the name 'Pacific' was applied to the tumultuous sea. Again, and for the greater part of the time, it is so placid that one can easily understand the beauty and the significance of the writer of sacred script when he said—'And I saw, as it were, a sea of glass mingled with fire—like unto crystal.'

"December 15 I entered upon my eightieth year. All of those years have been devoted to the cultivation and the admiration of plant life. This will be the fourth and, I suspect, the last of such works which I shall do to beautify the face of Mother Earth and, in this case, plant upon her bosom a bed of *Zoysia tenuifolia*. This species of the grass tribe, if given enough water, forms little billows of green on the landscape, and so soft and spongy that it is difficult to resist the impulse to lie down when one is walking upon it."

In the interest of more and better publicity for the work of The American Forestry Association, Lawrence Lockney, of Tracy, California, generously writes:

"I mailed several marked copies to other newspapers both in California and in New Mexico, and I can assure you that a certain bit of publicity will be given to your publication.

"Later on I will take the inside cover page of the current issue and make a newspaper story out of the program 'What the Association is Working For,' which I will mail to newspapers in towns where I am known. We all have a more or less latent desire to help in the work of reforestation, but a summing up of the work that I have actually done shows me that I am on the red side of the ledger, and I feel that a story to newspapers will clear my conscience for the moment. I have been present when certain organizations to which I have belonged, and still belong, have 'indorsed' reforestation and conservation, but neither the members of the organization nor myself have gone further than to grunt a half-hearted 'aye.'"

Foresters Receive Gift of \$30,000

Carnegie Corporation makes grant to Society of American Foresters for study of Forest Education in America

Announcement of a gift of \$30,000 from the Carnegie Corporation to the Society of American Foresters was made at the 28th annual meeting of the Society held at Columbia University on December 28 and 29. The grant is to be used by the Society for a study of forestry education in America, and the money will become available upon the Corporation's approval of the Society's plan of carrying out the inquiry specified. Action was taken by the meeting looking to the appointment of a representative committee to have charge of the study and the selection of a competent man to serve as a field investigator and director of the project. It is expected that the inquiry will be fully organized and that actual work will begin early in February.

Announcement was also made at the New York meeting of a gift of \$1,500 to be used by the Society as prizes for the best articles on the forest situation as it exists in the United States today and remedies for correcting it. The donor of the prize money requested that his name be not made public, but it was specified that the first award should be in the sum of one thousand dollars. For the second best paper a prize of two hundred and fifty dollars will be offered. The remaining two hundred and fifty dollars is to be used for expenses incidental to the prize contest. The judges are to be the former editor of the *Journal of Forestry*—Raphael Zon, Director of the Lake States Experiment Station, and the present editor—Samuel T. Dana, Dean of Forestry, University of Michigan.

The articles are to be published in the *Journal of Forestry* and the contestants are to be limited to the members of the Society and such other trained foresters as the council of the Society shall approve.

The New York meeting of the Society was attended by about three hundred foresters. Every section of the United States and many parts of Canada were represented. The meeting was considered one of the best in the history of the organization and resulted in a constructive plan of development for the future work of the Society. The meeting instructed the president of the Society to prepare a plan for the appointment of a paid secretary and to lay the proposal before the entire membership for approval. One of the most interesting and constructive sessions of the two days' meeting centered about a discussion of the present forest situation and the place which the Society should occupy in bringing about remedial action. The discussion resulted in the pass-

age of a resolution setting forth that the forest resources of the United States continue to diminish at an alarming rate, chiefly through destructive cutting and forest fire, and that responsibility for the situation rests upon both the general public and the forest land owners. The resolution further instructs the president of the Society to appoint a committee "to consider the problems presented in maintaining the productivity of the forest lands of the United States and to devise and recommend for consideration and action by the Society policies adequate to meet these problems."

The meeting also took a vigorous stand in respect to the place of forests in flood control on the Mississippi River and passed a resolution stressing the fact that the Mississippi River Commission as now constituted lacks the service and counsel of any one qualified by professional training to deal with the relation of forests to floods. A resolution directs the president of the Society to name a committee of three members to bring to the attention of the President of the United States the importance of having a qualified forester as a member of the Commission.

Other resolutions passed by the meeting call upon Congress for adequate appropriations to control the gipsy moth east of the barrier zone and also to provide adequate funds for the forestry work contemplated by the Clarke-McNary, the McNary-Woodruff and the McNary-McSweeney Acts; to provide proper fire protection for the National Forests and to protect the country against the introduction of insect and fungus parasites imported from foreign countries. A resolution was also passed calling attention to the evil effects of over-production in lumber manufacture and urging that this situation be called to the attention of federal agencies managing public forests. The efforts of organizations and individuals in Arkansas seeking to establish a state forestry department in that State were endorsed.

The results of election of new officers to serve for the present year were as follows:

President, Paul G. Redington, Chief, Biological Survey, United States Department of Agriculture; Vice-President, John E. Preston, Hammermill Paper Company; Secretary, Raymond E. Marsh, United States Forest Service; Treasurer, W. N. Sparhawk, United States Forest Service; new members of executive council, William G. Howard, State Forester of New York; and J. S. Holmes, State Forester of North Carolina.

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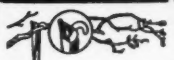
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Ask the Forester?

Each Month Forestry Questions Submitted to the Association Will Be Answered in This Column. If an Immediate Reply is Desired a Self-Addressed, Stamped Envelope Must Accompany Letter.



QUESTION: What would be the benefit, if any, from boring in a tree a three-fourths inch hole about six inches deep and three feet from the ground and filling the same with powdered calomel?—B. W., Alabama.

ANSWER: Sometimes such injury is followed by an extra large bearing of fruit. This simply follows the general law of nature that any mechanical injury to trees will often throw them into fruit. In the same way, chestnuts which have been affected by the blight will often bear heavily during the last year or two. The boring of holes in trees, or in any other way injuring them is not to be recommended.

QUESTION: Do antelope shed their horns as deer and elk do, or are they retained as in the cow and sheep?—K. C. S., Virginia.

ANSWER: Antelope resemble in a great many respects the family Bovidae to which belong bison, cattle, and sheep. However, they differ from this family in at least one respect, which is that they shed their horns annually. As in cattle, the antelope horns have a core. This core is not shed, but grows a horny sheath around itself every year, and it is this sheath that is shed. Deer and elk shed the entire horn, or, as it is called, "antler" every year.

QUESTION: Is Kaibab National Forest of Arizona a wild animal and game refuge?—G. B. B., California.

ANSWER: The Kaibab National Forest is not in itself a game refuge, but insofar as it coincides with the Grand Canyon Game Preserve it is. It so happens that the major portion of the Kaibab National Forest is within the game preserve.

QUESTION: If the Kaibab National Forest is a wild animal and game refuge are domestic cattle, sheep, and goats pastured there legally?—G. B. B., California.

ANSWER: Something less than two thousand head of cattle are permitted to graze on the Kaibab. These are located when possible on areas which do not interfere with the deer.

QUESTION: How may trees be protected during the winter from gnawing mice?—F. E. M., Iowa.

ANSWER: Wrap the lower part of the tree trunk with heavy paper, tie it, and then pile some earth about the base of the tree and the lower portion of the paper. This will prevent the mice from eating the bark between the paper and the ground level. Mice usually work under the snow, so the paper should extend up the trunk above the usual snow height. All paper and string should be removed during the following spring, and any mounds of earth should be pulled away.

QUESTION: Why is it necessary to plant seeds of forest trees in nurseries, and when two or three years old transplant them to the forests?—F. H., Michigan.

ANSWER: Direct seeding has been tried and for the most part has proved satisfactory. Nature accomplishes most of her reforestation through direct seeding, but she does it under conditions which are different from those that exist when man tries to reestablish a forest. Under natural conditions there is usually some forest cover and the soil has not been exposed for several seasons to the direct rays of the sun. When man tackles the job, he usually does so after the ground has been exposed and very often after fires or several seasons of plowing.

Perhaps more essential than this is the additional cost. To sow seeds broadcast over an area will take several pounds to the acre. White pine seed is now quoted at \$2.50 to \$3.50 a pound, and in recent years red pine, or Norway pine seed has cost from \$15 to \$17.50 per pound. By planting the seed in carefully prepared seed beds a high percentage of them germinate and develop into seedlings or transplants suitable for planting.

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Compton Comments on "Deforested America"

(Continuing from page 115)

ahead, trying to adapt forestry practice to business requirements,—the only permanent foundation for private forest perpetuation. The large industrial companies which happen to own the trees which their treeless critics, Mr. Pinchot and Maj. Ahern, would willingly regulate—some hundreds of them—are already practicing industrial forestry; and despite the annoyances and discouragements contrived by the professional prophets of forest woe, they will do more of it. These industries know that their perpetuation is dependent on forest growing. It is more vital to them than to any other group of citizens.

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"These records, moreover, take no account of the enormous amount of unmanaged natural reforestation, nor of companies which have taken only the first fundamental step in forestry, the protection of their lands from fire (which the U. S. Forest Service has declared to be seventy-five cent of the reforestation problem). Already at least 30 per cent of the lumber produced in the United States is from second, third, or fourth cuttings from the same land. The area under some sort or degree of private fire protection is not less than 200,000,000 acres.

"Nine years ago a mere handful were practicing forestry in any form. Still we are asked to believe that practically no progress is being made.

"Instead of spending large sums in deceptive propaganda, as carelessly charged by Messrs. Pinchot and Ahern, the associated timber and lumber industries are spending many millions of dollars yearly in the fundamental forestry work of creating commercial conditions that will make tree-growing and forest perpetuation profitable and therefore practicable, by maintaining dependable and profitable uses and markets for their products and by encouraging the proper conception of the forests as a resource forever usable and forever renewable. If they don't succeed, commercial tim-

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ber growing by private enterprise will not succeed. If they do, it will. Negative forestry by appeal and resort to governmental control will grow no trees. It will, however, add effectively to the discouragements and obstacles to private forestry and enterprise. More important, it will drive the practice of forestry out of private enterprise and into the hands of the government. It is not to the interest of either the wood-using industries or the public that the growing of trees—our one replaceable natural resource—become an exclusive government enterprise. It is to the interest of both that private enterprise be encouraged by wise public cooperation to go as far as it can in providing a permanent supply of forests and forest products. Under favorable conditions it will go far."

Minnesota's Forest Commission Makes Final Report

The Minnesota Reforestation Commission, whose preliminary report on the forest situation in Minnesota was made public during November last, has submitted its final report. The Commission's report, in printed form, constitutes a pamphlet of 129 pages and contains the most exhaustive compilation of information on forest conditions within the state ever presented. By an Act passed by the State Legislature in 1927, the Commission was created "to make a thorough study and investigation in respect to afforestation and reforestation of land, and delinquent real estate taxes, and the finances of counties and taxing districts in the forest areas" of Minnesota. The Commission was further instructed to report its findings back to the State Legislature to the end that that body may consider a thorough reorganization of the state's activities in forestry.

If the State Legislature accepts the recommendations of the Commission there will indeed be a sweeping reorganization and enlargement of the state's work in forestry and land management. Among other things, the Commission recommends that all of the powers, rights, and duties of the Conservation Department and the Department of Drainage and Waters as well as those of the State Auditor as to land, timber and mines be vested in a Commissioner of Conservation with necessary directors or deputies in charge of a Division of Forestry, a Division of Drainage and Waters, a Division of Game and Fish and such other divisions as the Commissioner may from time to time establish. A proposed bill to effect this reorganization and consolidation of forest and land management is included in the report.

The members of the Commission include the following: W. I. Nolan, Chairman, John A. Johnson, Vice-chairman, John I. Levin, Secretary, Fred W. Besette, Fred D. Long, Louis P. Johnson, Adolph S. Larson, George Nordlin, Rollin G. Johnson, W. I. Norton, Louis Enstrom, John O. Haugland, John

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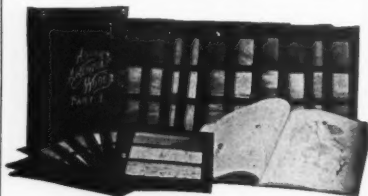
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Book News



and Reviews



STATE RECREATION. By Beatrice Ward Nelson, published by the National Conference on State Parks.

For those interested in outdoor recreation as exemplified by the state park, forest and game preserve movement, this volume is a fund of invaluable information. It brings together for the first time complete and concise information on what each state in the union is doing in providing recreation through the creation of parks, forests, and game preserves. For each state it likewise gives a list of state reservations thus far created, together with a brief description of their type, location, areas, recreational development, and special characteristics. The text discusses the laws at present in force dealing with the acquisition, development, and administration of park, forest, and game areas.

To those seeking hunting, camping, or exploring trips in state reservations, the volume serves as an admirable guide in that it tells how to reach the reservations in each state, the type of camping permitted, and other pertinent facts. From the tables given in the last part of the volume one may very quickly judge the progress and character of the state park, forest and game program in each state.

The opening chapter of the volume gives a history of state recreational areas, their administration, acquisition, and legislation. There is likewise a general discussion of county parks and state parks for cities.

The volume, prepared by Beatrice Ward Nelson, formerly Secretary of the National Conference on State Parks, is a contribution of that organization. The collection of the data, their preparation and publication, were made possible by funds supplied by the Laura Spelman Rockefeller Memorial.—O. M. B.

OUR FOREST:—A NATIONAL PROBLEM. By Ben J. Rohan. C. C. Nelson Publishing Company, Appleton, Wisconsin. \$1.00. Special prices in quantities.

This one hundred eighty-four page public school textbook is one of an "Exploratory Science Series" edited by Prof. C. O. Davis of the School of Education at the University of Michigan. It is refreshing in its type of treatment. The author seeks first to give the pupil an appreciation of the importance of

our forests as a national necessity; second, to suggest opportunity for good citizenship or life work by informing him of the things which are being done to maintain and renew forests.

Short sentences and simple language characterize the text. Each group paragraph has a heading in bold face type and at the end of each chapter are word lists, study helps. The latter comprise questions, suggestions for graphs and problems in arithmetic, and lists of helpful readings with page references.

Happy selection of illustrations including halftones, cartoons, and diagrams add to the attractiveness of the little book and will hold the interest of school children from seventh grade through junior high school.

Repetition is noted throughout the chapters but usually the statement is clothed in new language or given a new slant.

It would do thousands of older people good to read this book. Boys and girls, on the other hand, will treasure it for covering a big subject in language which they understand.—S. W. A.

FOUNDATIONS OF SILVICULTURE UPON AN ECOLOGICAL BASIS. By J. W. Toumey, Professor of Forestry, Yale University. John Wiley and Sons, New York. Price \$4.

This book brings to the student and investigator a wealth of information in this branch of science never heretofore encompassed within one volume in the English language. It is divided into two main parts. Part I deals with the factors of site—climate, physiographic and biotic; Part II treats of the classification and development of the forest vegetational units, the forest formation, association and stands.

The section on forest soils brings within easy reach the most important findings of outstanding forest soil investigators.

Part II contains five chapters, the first of which gives the classification and distinguishing features of the forests as they are divided into formations, associations and types. The writer presents the formations and classifications in the terms now in use.

The two chapters on forest stands present the distinguishing characteristics, development, relative value, and advantages of pure or mixed stands; even and uneven aged stands, and stands of different tolerance,

density or origin. The conditions favoring or hindering natural regeneration are also set forth.

The treatment of growth and yield of stands is necessarily brief, because the plan of the book is to point out the conditions of site and stand which influence growth and yield rather than to discuss details of management designed to enhance the yield.

One of the most interesting parts is the concluding chapter of Part II dealing with the form and development of the tree, the interrelated development of root, stem and crown, and the factors of site which influence the external and internal characteristics of the tree; not omitting growth, longevity, seed production and death.

More than twenty-five years of forest work permits Professor Toumey to speak as one who has lived with trees. He has during the past eight or ten years devoted most of his energies to the conduct of forest investigations. He develops his subject in a clear, logical style. American foresters, botanists, ecologists, teachers, students will welcome this book. It will unquestionably take its place as one of the foremost American forestry texts and reference books.—J. A. L.

Stockmen May Again Seek Grazing Legislation for National Forests

Passage by the California Wool Growers Association at its last annual meeting of a resolution favoring legislation to define "a national policy respecting the utilization of the grazing resources of the national forests," it is held, may again bring the question of grazing on the National Forests into the limelight. Just what action is contemplated by the National Association of Wool Growers and the National Livestock Association has not been made clear, but both of these associations will hold their annual meetings in the West soon and it is reported that an effort may be made to formulate legislation for presentation to Congress.

Two grazing bills are now pending on Capitol Hill, the Phipps bill, S. 2328, and the Smoot bill, S. 1969. Hearings on these bills have not been held and there is no evidence thus far that the committee to which the bills were referred will take action upon them, particularly since the livestock men are not unanimously in favor of certain features of each bill.

The resolution passed by the California Wool Growers Association would make the formulation of a national policy on the utilization of the grazing resources of the Forests a part of farm relief. It stresses the need of such action with the statement that "the present policy as expressed and observed in departmental regulations is nowhere and in no way binding upon future Secretaries of the Department of Agriculture."

Conservationists are therefore watching with very keen interest any legislation which the two national livestock organizations may attempt to formulate and press for passage in the present Congress.

President to Dedicate Florida Sanctuary

President Coolidge will make another trip into the South on February 1 to take part in the dedication of Edward W. Bok's bird sanctuary and singing tower at Lake Wales. It has been rumored that the President's address will deal with conservation. The singing tower houses one of the largest carillons in the world, and serves with the bird sanctuary as a memorial to Mr. Bok's grandparents, and an appreciation of his admission as a resident of this country.

The tower is fifty-one feet wide at the base and 205 feet high. As it rises it tapers in graceful fashion, gradually changing its shape so that at the top it is octagonal. Southern materials, pink Etowah marble from Georgia, Coquina, and other Southern stones have been used in its construction and, at the base, Creole and gray marble have been cut to suggest the outline of bells.

Stone carvings on the buttresses represent conventionalized birds of Florida—the crane, the pelican and flamingo, the doves and the eagle—and colored tile insets at the lancet windows depict the rise of life from sea forms to man. On the great north door are depicted the six days of creation. Hand-wrought panels tell the story of the Garden of Eden.

Southern Forestry Congress to Convene at New Orleans

The eleventh meeting of the Southern Forestry Congress will be held at the Roosevelt Hotel, at New Orleans, Louisiana, April 4 to 6, inclusive, according to an announcement just made. In 1928, the Congress was held at Louisville, Kentucky.



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National Forest TIMBER For Sale

Sealed bids will be received by the District Forester, Denver, Colorado, up to and including March 12, 1929, for all the merchantable dead timber standing or down and all the live timber marked or designated for cutting on an area embracing about 24,568 acres within Ts. 6, 7 and 8 N., R. 75 W., and T. 8 N., R. 74 W., 6th P. M., Big South Fork of Poudre River watershed, Colorado National Forest, Colorado, estimated to be 71,780,000 feet, board measure of Englemann spruce, 40,600,000 feet, board measure of lodgepole pine, 10,000,000 feet, board measure of alpine fir, saw-timber, log scale, more or less; and, of material which may be taken at the option of the purchaser, 23,350,000 linear feet of Englemann spruce, 21,775,000 linear feet of lodgepole pine, and 13,420,000 linear feet of alpine fir 4 inches to 7 inches in diameter in saw-log trees and in trees too small to produce sawlogs, but offers as part of the bid to take all or any specified quantity of this optional material will be considered in making the award. No bid of less than \$1.50 per M feet for saw-timber or of less than 15 cents per hundred linear feet for smaller material, will be considered. \$5,000 must be deposited with each bid, to be applied on the purchase price, refunded or retained in part as liquidated damages, in accordance with the terms of the sale. The right to reject any and all bids reserved. Before bids are submitted full information concerning the timber, conditions of sale, alternative bases of utilization, and submission of bids should be obtained from the Forest Supervisor, Fort Collins, Colorado, or the District Forester, Denver, Colorado.

Early Settlement of the Yosemite National Park Controversy Expected

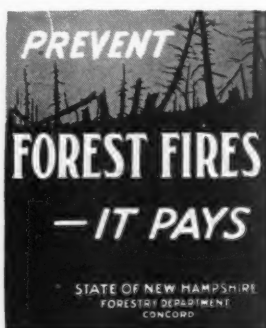
The adjustment of the private land problem in Yosemite National Park, long the center of national interest and concern, is promised by legislation now pending in Congress. This legislation, in fact, is expected to settle not only the Yosemite controversy but all other National Park complications arising from private lands within the boundaries of any National Park. After both the Forest Service and the National Park Service had considered a special bill designed to meet the unsatisfactory situation in Yosemite, Representative Cramton of Michigan introduced an amendment to the regular appropriation bill of the Department of the Interior providing for an appropriation to be matched by private subscription and in an amount estimated to be sufficient to enable the Federal Government to purchase outright private lands in Yosemite and other National Parks. This course provides a simple and direct method of meeting such complicated and controversial situations as have long characterized the administration of Yosemite.

The House accepted Representative Cramton's amendment, but when the Senate passed the appropriation bill the amendment was modified so as to strike out a provision authorizing the Government to institute condemnation proceedings where agreements as to price between the owners of private lands within the Park and the Federal Government could not be reached. The matter is now in conference between the two Houses and those following the legislation are opti-

mistic in their belief that the disagreement will be satisfactorily adjusted. It is pointed out that the condemnation feature of the amendment is vital to the acquisition of private lands in the Park because without this right any owner, if so inclined, could place a price upon his land that the Government could not reasonably meet.

The amendment as passed by both Houses provides an immediate appropriation of \$250,000.00, and the authorization of \$2,750,000.00, the latter sum to become available as the National Parks arrange satisfactory contracts for the purchase of private lands within National Park boundaries. The Government's appropriations, however, are contingent upon the raising by public subscription of an equal amount, namely, \$3,000,000.00. Representative Cramton's plan, therefore, contemplates a total sum of \$6,000,000.00, which it is estimated by Park officials will suffice to permit the Federal Government to acquire all private lands within all National Parks.

The situation within Yosemite National Park has been acute for a number of years owing to the fact that some 10,000 acres inside the western border of the Park is owned by lumber companies which have been cutting the timber and over whom the National Park has had no jurisdiction. The cutting operations have been a Park eye-sore to people visiting Yosemite and have resulted in a national protest. The Park Service, however, having no money with which to acquire the land, or no jurisdiction over the owners, has been unable to remedy the situation. One suggestion advanced was that the Government should trade land or timber, or both, with the National Forests for the private land and timber within Yosemite National Park. Representative Cramton's amendment however, will make such action unnecessary.



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New England Forestry Congress

In an effort to develop New England's forest resources to full productive capacity, representatives of the forestry, lumber, paper, agricultural, recreational, and civic interests of that region will meet at Hartford, Connecticut, for the third New England Forestry Congress, February 1 and 2.

Among the speakers will be Dr. J. Horace MacFarland, Harrisburg, Pennsylvania, Past President, American Civic Association; Paul Redington, Chief of the United States Biological Survey; W. A. L. Bazeley, Commissioner of Conservation in Massachusetts; H. R. Lewis, Commissioner of Agriculture of Rhode Island; and Henry S. Graves, Dean of Yale School of Forestry.

What is to Become of Our Northern Elk Herd?

(Continued from page 95)

elk have been shipped from the Yellowstone Park. In addition to this number shipped by the Park Service, the State Game Department has shipped probably less than 1,000 elk, which were trapped outside the Park. So it is easily seen that the demand for live elk for zoological parks or stocking in other parts of the country is too limited to be of any great value in disposing of the surplus.

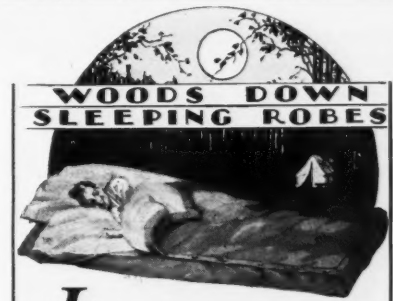
As to the size of the herd, theoretically, this should depend on the carrying capacity of the winter range with a considerable margin left for an extremely severe winter or for an unusual drift from the Jackson Hole herd, which is possible. The elk herds now exist; they are unique in that they are the largest herds of big game animals in the United States; they are an attraction to Yellowstone Park and the surrounding country. The government now has ninety per cent of the range needed to take care of the northern herd, or to take complete care of a herd half the present size. The ten per cent lacking is in winter range. Surely the government is justified in providing this relatively small amount of additional range to double the size of the herd and reduce starvation to a minimum.

Experience has shown that as a general proposition the feeding of hay to elk during the winter as against providing pasture for them is not advisable for the following reasons: Feeding hay to elk tends to make them dependable on feeding, rendering them more or less domesticated and less willing to rustle natural food for themselves. The cost of feeding hay is very high. In an emergency, to prevent many of the animals from starving, the high cost of feeding could be justified, but ample winter range would be far better and cheaper.

The elk problem, then, is to provide favorable conditions for a normal increase in the present herd and to utilize through hunting the surplus from year to year. Manifestly, there are many details to work out before such a condition results. Accurate counts by sexes and ages are of prime importance in game management. For a number of years previous to the war, bull elk heads were in great demand as trophies and a very large percentage of the kill was bulls. Then the tooth hunter killed bulls almost exclusively until in 1916 it was doubtful if there were enough vigorous bulls in the herd to insure a normal calf crop. Fights between males, and starvation also contributed to a heavier loss in males. At the present time the reverse is true; the high percentage of kill is cows. The hunter of today seeks a good piece of meat instead of a trophy. Elk are considered to be the most polygamous of all the deer,

and to insure the maximum calf crop there should be a ratio of from five to ten cows to each mature bull, so it can readily be seen why an accurate count of the sexes is necessary. To kill about the proper number each year is of prime importance in order to keep the sexes properly balanced and the herd approximately stationary in numbers.

Parasitic infestations and diseases must be controlled. Practically all of last year's elk calves succumbed to starvation, parasites and diseases. Wood ticks infest the animals in countless numbers and are a contributing cause to the death of hundreds of elk each year. No effective control measures for this parasite have been worked out or even suggested. Experiments with sulphurated salt are being tried by the Forest Service and the State Game Department on the theory that exudation of sulphur through the animals' skin will cause the ticks to drop off. Psoretic scab mites which cause the parasitical disease of scabbies have also been found in the elk, although thus far they have never been known to be fatal to elk. The Jackson Hole herd of elk, numbering some twenty thousand head, has experienced losses among yearling calves through calf diphtheria, and it is quite probable that the northern Yellowstone herd is affected by the same disease. Other diseases, such as hemorrhagic septicemia, tuberculosis, pneumonia, and intestinal catarrh, are existent in the northern herd in a light degree. No investigations, however, by competent veterinarians have been made to determine the different diseases the herd has suffered from, and it



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is the opinion of the rangers and wardens that the entire herd is in grave danger of being wiped out by disease.

Hunting methods are, as a rule, very unsatisfactory. In fact, the last two years it can be said that but little hunting was done. It was more of a waiting proposition, the hunters getting out early in the morning and waiting for a bunch of elk to come along. No other place in the whole world can a person witness such pot shooting of big game animals as in the vicinity of Gardiner, Montana. As an eye witness to the killings of the past two years, I could cite many instances that would seem unbelievable.

On the morning of December 16, 1926, for example, approximately one hundred hunters managed to completely surround a bunch of about two hundred elk in an open sagebrush country near Jardine, Montana, at about 7.15 A. M. As shooting was not allowed before eight o'clock, the elk became so confused by that time that they huddled together on an area of four or five acres and remained almost motionless. The hunters became so excited that many of them could hardly wait for eight o'clock. As soon as the firing started, some of the hunters lost all control of themselves and shot their rifles as long as their ammunition lasted. One hunter of whom I took particular notice fired fifteen times at elk less than one hundred yards without dropping a single one of them. Of the first hundred or so shots fired, I do not believe more than six or seven elk dropped, although many were gut-shot or otherwise crippled. The elk, of course, scattered when the firing began, some of them passing within fifty feet of hunters. Fully two thousand shots were fired within fifteen minutes, the shooting continuing until all the elk were out of sight. A mad scramble then ensued for the slaughtered animals. No one could positively claim any particular elk and many disputes arose. However, it was found that there had been sufficient killed for everyone, and a considerable number in addition for the State Game Department.

Incidents such as these could be recited at length to illustrate the extremely unsatisfactory methods now in vogue for taking the increase of the herd. One must need know

local sentiment to understand why such condition is tolerated locally. Any animal, no matter how fine or noble looking, can become a pest, and that is what the elk have become to the people in Upper Yellowstone Valley. The elk destroy fences, waste and eat the ranchers' hay and trample out and eat his pasturage, besides dying on his land in the spring. No agency will take the responsibility for the elk, furnish them with feed or pay for the damage they do, or bury them when they die, but according to the State game laws the officers of at least three different governmental agencies are required by their oaths of office to see that the farmer in protecting his property does not harm one of the animals.

With the acquisition by the government of the privately owned lands in the winter elk range, these conditions will be remedied and in the course of time local sentiment will change.

The predatory animal population has an important bearing on game herds. Contrary to the popular opinion, the writer maintains that a fairly large number of predatory animals is a benefit rather than a detriment to the game animals. Especially so are coyotes. Running in packs on crusted snow, it is comparatively easy for coyotes to bring down such animals as deer, antelope and calf elk, but it is the weaker animals they usually select, the elimination of which is beneficial to the herd.

In yet another way would the extermination of predatory animals be extremely detrimental to the game animals. Such animals as the elk, deer, and antelope have developed through the past ages in a much more balanced state of nature than now exists, and they owe the very qualities which most appeal to mankind to constant struggle with their enemies. The stateliness, swiftness of foot, beauty of limbs and body of the elk today are greatly the result of his successful survival through the ages, constantly subject to the attack of predatory animals. Now, if mankind is going to destroy these natural conditions and substitute a different environment under which the elk are not harassed by enemies, and in other ways to eliminate the obstacles in its struggle for existence, an entirely different animal will develop, more stocky of limb and body, slow of movement, lacking the alertness, speed and gracefulness we so greatly enjoy seeing in wild animals. In other words, we destroy the beautiful wild animal and substitute a nondescript semi-domesticated one. Control of wolves, coyotes, and mountain lions on ranges used by large numbers of game animals, but not extermination, is advocated.

Enforcement of game laws, forage requirements, conflict with domestic stock, limitation of the Lamar River Buffalo herd now grazing upon Elk Range, control of migrations, and life history, will have to be worked out before the problem is satisfactorily solved.

New Officers of The American Forestry Association

George D. Pratt was reelected President of The American Forestry Association in the election held by letter ballot last month. John C. Phillips, President of the Massachusetts Fish and Game Association, Louis J. Taber, Master of the National Grange, and W. D. Tyler, former President of the Southern Forestry Congress, were elected as new members of the Board of Directors. Colonel William B. Greeley, Secretary of the West Coast Lumbermen's Association, was re-elected as a Director.

The committee appointed to pass upon and record the ballots completed its work on January 8. This committee was composed of Harold S. Betts, David L. White, and Morgan Pryse. The result of the count showed the election of the following officers:

President, George D. Pratt of New York; Treasurer, George O. Vass of Washington; Directors, to serve 5 year terms, Colonel William B. Greeley, John C. Phillips, Louis J. Taber; Director to serve 4 years, W. D. Tyler; Vice-Presidents for 1929, James B. Aswell, Louisiana, Representative in Congress; Daniel Carter Beard, New York, National Boy Scout Commissioner; Devere Dierks, Arkansas, Dierks Lumber and Coal Company; W. B. Harbison, California, California Farm Bureau Federation; Charles H. Herty, New York, Chemical Foundation; Clark Howell, Georgia, Publisher, *Atlanta Constitution*; W. D. Humiston, Idaho, Potlatch Lumber Company; Scott Leavitt, Montana, Representative in Congress; Clarence C. Little, Michigan, President, University of Michigan; Charles H. MacDowell, Illinois, Vice President, Armour and Company; Charles L. McNary, Oregon, United States Senator; John McSweeney, Ohio, Representative in Congress; Hon. Charles Nagel, Missouri, Chairman, Business Men's Commission on Agriculture; Hon. George A. Parks, Alaska, Governor of Alaska; Joseph Hyde Pratt, North Carolina, North Carolina Forestry Association; George Scott, Illinois, National Director, Izaak Walton League of America; H. L. Schantz, Arizona, President, University of Arizona; Mrs. John D. Sherman, Colorado, former President, General Federation of Women's Clubs; Frederic C. Walcott, Connecticut, United States Senator; Mrs. Cora C. Whitley, Iowa, Vice-Chairman, Division of Conservation of Natural Resources, General Federation of Women's Clubs; and B. F. Williamson, Florida, President, Florida Forestry Association.

Lumbermen Seek Federal Aid

Declaring that the control of lumber production is as necessary to industrial reforestation and a perpetual timber supply as controlled production of oil and coal is to the welfare of those industries the National Lumber Manufacturers Association has appealed to Congress for legislative assistance in regulating lumber and wood production. In a letter dated January 3, Wilson Compton, Secretary-Manager of the Association, ad-

ressed letters to President Coolidge, President-Elect Hoover, cabinet members, and members of the present and next Congress transmitting a resolution passed by the Board of Directors of the National Lumber Manufacturers Association asking that "the scope of any legislative enactment which will under suitable safeguards permit of control in the coal and oil industries be extended to include also forest products."

The resolution adopted by the Board of Directors of the Association, referring to the proposals for controlled production of oil and coal as meritorious, explain that whereas neither oil nor coal once removed can be replaced, the timber supply can be made perpetual through reforestation, and that the American people are entitled to assurance of such perpetual supply. Because "wasteful over-production and consequent low prices of standing timber" resulting, it is implied, from inability to regulate production under the law, present governmental policy contributes to deforestation.

The resolutions point out that the United States government is the largest individual owner of standing timber; that low prices resulting from over-production reduce the returns which the government could obtain from its forests, that reforestation can be accomplished only through the leadership of the Federal Government and the cooperation of state governments, and that controlled production is desirable to that end.



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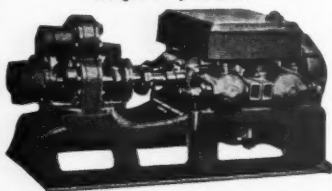
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Trees of the Bible

(Continued from page 92)

Babylonian willows, poets and artists to the contrary, were never the weeping kind. The weeping willow, we are informed, existed nowhere in Palestine nor in Asia, nor in the valley of the Euphrates in the time of the Captivity of the Jews in Babylon, but were brought from China much later in history. Nor does the text refute this: "By the rivers of Babylon, there we sat down, yea, we wept, when we remembered Zion. We hanged our harps upon the willows in the midst thereof" (*Psalms 137:1, 2*). Not a willow weeping in the lot, but "we," *we* wept. "The willows of the brook compass him about," thus to *Job*, God concerning the hippopotamus (*40:22*). In the same breath, God speaks again, this time of the behemoth lying under the lotus trees "in the covert of the reed, and the fen. The lotus trees cover him with their shadow."

If, as has been averred, the Book of *Job* was written by Moses, and who am I to deny it, it must be conceded that he as well as Solomon "knew trees." Lotus is the old Greek name for the tree the Arabs knew as *Zizouf lotus*, some forty species of which, deciduous and evergreen, range over tropical and sup-tropical regions of both continents, some with edible fruit, the best of them being *Zizyphus jujuba* which claims Syria as its native soil, and which may be the lotus tree of the poet *Job*, or *Moses*, for they were common in the valley of the Jordan River, and the prickly branches with their delicate green leaves droop as naturally as the willow, especially in the Fall when the fruit is heavy upon it, the fruit like a redbrown olive, and, when fully ripe, looking like a puckered old brown face, and having a not unpleasant acidity.

Not the same, yet similar, bearing its name and coming somewhere along in the genealogy of the jujubes, is the murderous looking bush, used for hedges, called *Zizyphus spin-christi*, having soul-piercing spines, believed to be those from which the Crown of Thorns was contrived. If so indeed, a crown of them would be supreme irony.

(In the March issue Miss Borah will deal interestingly with the Olive trees, most ancient of the trees of Palestine today.)

WHO'S WHO

Among the Authors in This Issue

IGNATIUS PHAYRE, world-traveler and well known Irish novelist, is in reality William



Ignatius Phayre

George Fitz-Gerald, brother of the Right Honorable Desmond Fitz-Gerald, Minister of Defense in the Cabinet of the Irish Free State. He recently completed a three-year exploration trip through the Latin-American nations, and his 1,000-mile trip up the Amazon to Brazil's "Green Hell" was by official authorization of the Government of that country.

J. B. WOODS is Forester for the Long-Bell Lumber Company, Longview, Washington, and is engaged in many interesting forestry experiments in both the far west and Louisiana, where the company has vast holdings.

CLARENCE E. BOSWORTH is another traveler and historian, and has spent a good part of his life among ancient tribes and races, interpreting their legends and recording their history. He lives at Atlantic City, New Jersey.

OTIS W. FREEMAN is professor of Geology at the State Normal School, Cheney, Washington, and for several years occupied the same position at the University of Hawaii. He is author of many interesting articles dealing with the Islands.



Otis W. Freeman

WILLIAM RUSH is Assistant Forest Supervisor of the Absaroka National Forest, in Montana, and an authority on wild life of that region.

LOUIS A. WARREN is Director of the Lincoln Historical Research Foundation, Fort Wayne, Indiana; FRANKLIN W. REED is Industrial Forester for the National Lumber Manufacturers Association, Washington, D. C.; ADELAIDE BORAH is a research specialist and writer of Washington, D. C.; and LILIAN M. CROMELIN an Assistant Editor and ALMA CHESTNUT a Staff Writer of AMERICAN FORESTS AND FOREST LIFE.

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